

International Abstract of Surgery

SUPPLEMENTARY TO

Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H MARTIN M.D Chicago

PROF PAUL LECHE, PARIS, FRANCE

SIR BERKELEY MOTMILAN K CMG CB., Leeds England

SUMNER L KOCH, M.D Abstract Editor

Volume XXXVII

July to December 1923

PUBLISHED BY
THE SURGICAL PUBLISHING COMPANY OF CHICAGO
26 NORTH MICHIGAN AVENUE, CHICAGO

Copyright by
THE SURGICAL PUBLISHING COMPANY
OF CHICAGO
1931

CONSULTING EDITORIAL STAFF

GENERAL SURGERY

AMERICA F W LLYS ANDREWS DONALD C BALFOUR WILLARD BARTLETT FREDERIC A BESLEY ARTHUR DEAN BEN N J F BRYN R GEORGE E BREWER W B BRIDGMAN D VID CHEEVER H R CHILLETT ROBERT C COFFEY F G GORTY CONNELL FREDERIC J COTTON GEORGE W CRILE WILLIAM R C BRIN HARVEY CUSKING J CHALMERS D COY CHARLES D TOWN D N EDWARDS J M T FINNEY JACOB FRANK CHARLES H FRANKLIN EMERY I FRIEND WILLIAM FULLER JOHN H GIBSON J D W G AMAM W W GINT A E H LESTAD M L HARRIS A P HEINICK WILLIAM W HERBERT THOMAS W HIL TINTON JARVIS JACKSON F S JUDG C F KARRLEE ARTHUR A LA ROBERT G LECONTE DEAND LEWIS ARCHIBALD MACLAREN EDWARD M KITTY RUDOLPH M LAS CHILLES H MAYO WILLIAM J MA JOHN R MCDILL STUART MCGUIRE LEWIS S MCMINTYR WILLY M ER FRED T M ERNE JAMES M NERY EDWARD H NICHOLS A J OCHROFF CHARLES H PECK J R PENNINGTON S C PLUMMER CHARLEY A POWERS H M RICHTER FRANK RICHARD H A ROYSTER W E SCHNEIDER CHARLES L SCUDO M G SEELIG F J SEA JOHN I SUMMIT JAMES E THOMPSON HERMAN TUBORLE JOHN W TUCKER GEORGE TULLY A GRA JOHN R W TREN CANADA L W ARCHIBALD G E ARMSTRONG H A BRUCE I H CAMERON JAMES HALPERN Y J ALLEN HUTCHINSON FRANCES J SHEPHERD F N G STARR ENGLAND H B LINTON ANDER ARTHUR T BARBER SA W TOWN CRYSTAL W SAMMON HANCOCK SIR ARTHUR NOT LANE G H MAIR ROBERT MILLS M BERKELEY MONTAGUE ROBERTIN PARKER S HAROLD STILES GORDON T ALOR IRELAND S WILLIAM I LAND OF C WHIFFE

GYNECOLOGY AND OBSTETRICS

AMERICA F T ANDERSON BROOK M A WACH W F ASHTON J M BALDY CHANNING W BARRETT HAN J BORDT J W LY BOWLEY LYROY BRON H Y T BYFORD JOHN G CLARK THOMAS S COLLETT JOHN ED F D V JONAS B D LEE ROBERT L DICKINSON W A NEWELL DORLAND E C DUDLEY HUGO FERRANTY CHILLES LIDER TALKER FINGOLDY (FORM) GELMOR J RIDDLE GUYE SYR C GORDON HARTON C HUNT JOSEPH T JOHNSON HOWARD A KELL FLORENCE KELL L J LARSEN H P LEWIS FRANK W LYNN WALTER P M TOWN L F MONTGOMERY G ORLY C MONTAGUE HENRY P NEWBY GEORGE H NOBLE CHARLES E PADDOCK CHILLES B PENNINGTON RELL PETERSON JOHN O PORAK CHARLES B REED EDWARD RETVOLDEN EMIL RIPS JOHN A S MON F F SIMPSON RICHARD R SMITH WILLIAM S STON WILLIAM L STODDIFORD F A KIRK J T CARR HOWARD C T LOR H M VERNER W F B WELFIELD G ORG G W ED J J WHITEIDGE WILLIAM CANADA W B CHURCH WILLIAM G EDWARDS F W MA LOW K C McIL RAITH B P W TOWN A H WIGHT ENGLAND ROSS L ANDREWS THOMAS W EDEN W E FOTHERS LL T B HELLIER THOMAS WILSON SCOTLAND WILLIAM J EDWARDS J M SILVER KERR IRELAND H STINGA TERRY AUSTRALIA RALPH WOOD LL NEW ZEALAND HEARY JELLYTT SOUTH AFRICA H TEMPLE McFILL INDIA KED IN THE DAI

GENITO-URINARY SURGERY

AMERICA WILLIAM L BROWN WILLIAM T BELFIELD JOSEPH L BOGGS L W BRIDGEMAN H CHANOT JOHN R CALLER CHILLES H C STROOD JOHN H C VINGHAM J FRANKLIN R HAGYER ROBERT HERBERT EDWARD L KATTS J GORTY KORNICHER F KIRKMAN BRADFORD LEWIS G WILLIE MACGOWAN L E SCHMIDT J D STELLY SYR J A TOWN WILLIAM N WISE ED RICH H L YOUNG ENGLAND JOHN G PARKER J W THOMAS WALKER INDIA MING AND ALAL MITRA

ABSTRACT EDITORIAL STAFF—CONTINUED

ORTHOPEDIC SURGERY

AMERICA ELVEN J. BERENSTEIN WILLIAM H. BYFORD F. W. CAROTHERS WILLIAM A. CLARK DEWEY W. CHILF ROBERT V. J. J. D. NEL H. LEVINTHAL PHILIP LEWIS R. C. LOVEDGAM JOHN MITCHELL BRY
 IDO H. MOORE F. M. G. M. R. JONES W. POWERS LIONEL D. PRINCE RUDOLPH S. REICH D. VID R. TELFER
 S. C. WOODENSTADT CANADA D. GORDON E. H. ENGLAND HOWARD BUCK E. ROCK CARLENE HADGORTH
 DEN E. LAMING C. W. H. H. H. T. P. M. M. H. JOHN MCKEY CHARLES ROBERTS G. D. TELFORD

ROENTGENOLOGY AND RADIUM THERAPY

AMERICA WILLIAM L. BROWN ADOLPH HARTUNG CHARLES H. HEACOCK ALFRED J. LARRY

SURGERY OF THE EYE

AMERICA THOMAS D. ALLEN A. GUSTL B. DYER F. P. SCHUSTER S. A. SCHUSTER VIRGIL WRIGHT
 C. CORRY Y. M. C. ENGLAND F. J. CUNNINGHAM M. L. HEPBURN FOSTER MOORE SCOTLAND JOHN
 PEARSON ARTHUR H. BRIDGES RAMSEY H. TRAQUAIR MANFORD R. W. T. JAMES A. WILSON

SURGERY OF THE EAR

AMERICA JAMES C. BRAUNELL, JR. GUY L. BOYDEN THOMAS C. GALLOW FRENCH K. HANSEL A. R.
 HOLLENDER THOMAS P. O'CONNOR OTTO M. ROTT F. P. SCHUSTER S. A. SCHUSTER W. B. SEARL MANFORD
 R. WALTZ CANADA W. H. JAMIESON ENGLAND G. J. JONES SCOTLAND J. S. FRASER IRELAND
 T. O. GRAHAM

SURGERY OF THE NOSE, THROAT AND MOUTH

AMERICA GUY L. BOYDEN JAMES C. BRAUNELL, JR. M. TOWN N. FREDERICK CHARLES W. FREEMAN
 THOMAS C. GALLOW FRENCH K. HANSEL A. R. HOLLENDER THOMAS P. O'CONNOR OTTO M. ROTT F. P.
 SCHUSTER S. A. SCHUSTER W. B. SEARL MANFORD R. WALTZ AUSTRALIA V. MUNRO INDIA JOHN T.
 MURPHY

JULY 1923

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G., C.B., Leeds
PAUL LECÈNE, Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES E. KENNEDY Gynecology and Obstetrics	JAMES P. FITZGERALD Surgery of the Eye
LOUIS E. SCHMIDT Genito Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
PHILIP LEWIN Orthopaedic Surgery	Nose and Throat

CONTENTS

I Authors	ii
II Index of Abstracts of Current Literature	in
III. Editor's Comment	x
IV Abstracts of Current Literature	1-84
V Bibliography of Current Literature	85 104

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Offices 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain Baillière, Tindall & Cox, 8 Henrietta St. Covent Garden, London, W. C.

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Abbott, C. R. 13
 Abrecht, H. A. 30
 Allen, R. W. 63
 Altona, F. 35
 Ammon, S. E. 30
 Angeli, A. 34
 Anagnostis, G. D. 74
 Bachrach, R. 75
 Basting, F. J. 83
 Barnard, T. W. 3
 Benedict, W. L. 4
 Bennett, T. I. 39
 Berry, J. 8
 Burcher, E.
 Blacker, G. 59
 Bland, K. 8
 Borden, L. 26
 Boyd, E. 6
 Brantch, W. F. 74
 Brown, G. B. 8
 Brooking, F. 26
 Brunning
 Buckle, M. 47
 Burger, L. 7
 Burnett, L. S. 6
 Caryl, A. 33
 Carter, W. W. 7
 Cave, H. W. 5
 Chesky, V. E. 48
 Childs, S. B. 8
 Caprini, G. 78
 Clark, J. G. 40
 Clayton Green, W. H. 8
 Corbin, B. C. 73
 Costain, W. A. 39
 Cowan, J. 46
 Crile, G. W. 83
 Crompton, C. R. B. 7
 Desander, W. H. 67
 Deakin, V. R. 37
 Delaney, E.
 Dewes, H. 77
 Diallana, A.
 Deopal, D. 68
 Du Bray, E. 8
 Dubot, E. 5
 Eastman, J. R. 43
 Eggers, C. 3
 Enderlin
 Farthall, H. A. T. 3
 Fasano, M. 78
 Fernandez, A. 8
 Fischer, A. 3
 Florence, A. 28
 Foley, F. E. 5
 Francis, T. 24
 Fraser, J. S. 5
 Fraser, C. H. 3
 Fromme, A. 42
 Grist, S. H. 6
 GRI, E. O. 7
 Goldenberg, U. 5
 Gornach, 7
 Grubbs, E. A. 37
 Grunt, F. C.
 Grunhaus, M. 69
 Grunsfeld, J. G. 3
 Grunson, J. M. 3
 Guider, H. 50
 Guenther, B. 43
 Guyot, 33
 Haden, R. L. 3
 Hall, J. N. 8
 Hammer, A. W. 53
 Handley, W. S. 70
 Harmer, T. W. 43
 Harper, P. T. 66
 Harter, J. A. 63
 Harms, D. J. 9
 Harris, W. 6
 Hartmann, Keppel, 37
 Hasdell, C. C. 68
 Heister, J. D. 4
 Hepporn, T. N. 7
 Hime, J. C. 58, 7
 Hinder
 Holland, E. 6
 Homans, J. 39
 Horn, W. 73
 Houser, L. M. 3
 Howard, M. Q. 77
 Hunt, E. L. 3
 Jackson, A. S. 35
 Jacobs, H. G. 63
 Jakobson, 8
 Jarvis, D. C. 6
 Jemerson, 33
 Johnson, G. B. 7
 Jones, H. W. 38
 Judd, E. S. 39
 Jungling, 80
 Kahl, 46
 Kasser, V. D. 24
 Keller, J. 33
 Kerr, W. J.
 Key, E. 54
 Keyser, L. D. 73
 Kok, F. 8
 Koppell, N. 39
 Kowser, J. B. 40
 Kross, I. 38
 Kuratka, H.
 Lahey, F. H. 7
 Lamm, T. H. 24
 La Calve, J. 35
 Leclerc, G. 5
 Leebrook, J. D. 56
 Liebmann, M. 70
 Lopez-Trigo, J. T. 48
 Losen, H. 34
 Lyons, J. H. 30
 Magro, G. 57
 Mahle, A. E. 6
 Marion, 74
 Martin, B. 4
 Martin, J. P. 3
 Martyn, H. L. 24
 Matheson, A. R. 30
 Maxwell, A. A. 80
 Mayo, C. H. 8
 Mazur, C. 58
 McCannell, A. D.
 McCarthy, M. F. 6
 McCoy, J. 66
 McNulty, J. E.
 Meeker, W. R. 75
 Meulenrecht, E. 3
 Meyer, A. W. 44
 Minto, P. 55
 Miron, P. L. 78
 Mitchell, J. F. 53
 Mixer, W. J. 3
 Montgomery, M. L. 26
 Moore, R. S. 9
 Morgan, D. H.
 Mueller, A. 3
 Mueller, W. 48
 Muller, G. F. 69
 Newhart, K. 67
 Nides, H. 68
 Oatler, F. R. 63
 Orator, V. 73
 Orr, T. G. 5
 Osmond, R. B. 44
 Peck, C. H. 5
 Perlman, J. J. 6
 Perthes, G. 46
 Peters, J. J. 4
 Peterson, R. 64
 Petroff, N. 73
 Phemister, D. B.
 Pineda, M. 30
 Pisch, A. F. H. 8
 Polozovski, M. 5
 Pool, E. H. 40
 Price, H. T. 70
 Pringle, J. H. 8
 Pusep, L.
 Rabier, J. 35
 Ramsdell, F. 37
 Rand, C. W.
 Rans, E. 30
 Reader, W. G. 4
 Rapan, J. C. 83
 Reck, H. 34
 Riviere, C. 6
 Robledo y Sans, J. B. M. 77
 Rogers, R. R. 35
 Romano, W. H. C. 16
 Rodberg, H. 38
 Rusk, G. 3
 Saito, M. 26
 Saenger, F. 7
 Sharpe, E. 34
 Schmidt, E. O. 36
 Schmitt, H. 60
 Schmitt, A. 44
 Schor, H. 3
 Seelig, M. O. 39
 Seistrunk, W. E. 57
 Smith, G. G. 7
 South, L. W. 24
 Spencer, H. R. 43
 Stahl, H. 5
 Stephens, R. 6
 Stevens, T. G. 6
 Still, O. F. 66
 Sweet, J. E. 84
 Symonds, C. 33
 Taylor, H. M.
 Tishman, H. C. 33
 Valenti, A. 35
 Valentin, B. 77
 Vandepiet
 Vanderhoff, D. 68
 Verhoef, F. H. 4
 Von Borm, J. 74
 Von Dettrich, L. 48
 Von Stabenrauch, 49
 Vorkender, K. 8
 Walker, H. 5
 Walsh, F. M. R. 5
 Warr, H. A. 6
 Welch, G. 46
 Wells, W. E. 63
 Westcott, C. D. 3
 Weston, P. O. 77
 Wheeler, W.
 White, P. A. 84
 Wolf, H. F. 43
 Wright, A. E. 54
 Wright, R. E. 3
 Zacher, 67
 Zetina, F. 3
 Ziegmond, J. 73

CONTENTS—JULY, 1923

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Head

- RAYN, C. W. Osteoma of the Skull. Report of Two Cases One Being Associated with Large Intracranial Endothelioma
- WHEELER, W. Traumatic Intracranial Aneurysm
- PRESTON, D. B. The Nature of Cranial Hyperostosis Overlying an Endothelioma of the Meninges

Eye

- FRATER, C. H. and HOOKER, K. M. Unilateral Exophthalmos. A Clinical Report of Five Cases
- WRIGHT, R. F. and BARNARD, T. W. The Importance of Radiography in Doubtful Cases of Optic Atrophy. With Special Reference to Pseudotumor
- WESCOTT, C. D. Some Practical Points in Refraction
- GILSON, J. M. Headache from the Ophthalmological Standpoint
- HETTINGER, J. D. Some Observations on Eyelid Lesions of Nasal Origin
- FERNANDEZ, A. S. Report of Case of Melanosarcoma of the Conjunctiva
- REIDER, W. G. Tuberculosis as Therapeutic Agent in Certain Forms of Keratitis
- VANDERBILT, F. H. A Case of Mesoblastic Lesion of the Iris
- BENNETT, W. L. Tumors and Cysts Arising Near the Apex of the Orbit
- GOLDSTEIN, M. Glaucoma Surgery

Ear

- FRATER, J. S. The Pathological and Clinical Aspects of Deaf Motus
- JONES, D. C. The Effect of Small Doses of Roentgen Ray in Certain Forms of Impaired Hearing
- MCCOY, J. The Treatment of Defective Hearing by Small Doses of X Ray
- BOYD, E. The Management of Discharging Ears in Children
- MCCARTHY, M. F. The Therapeutic Problems of Acute Middle Ear Infection

Nose

- CARTER, W. W. The Value and Ultimate Fate of Bone and Cartilage Transplants in the Correction of Nasal Deformities

- JONES, G. B. Headache from the Standpoint of the Rhinologist

Mouth

- BROWN, O. B. Infection and Inflammation of the Investing Tissues of the Teeth and Their Relation to the Maxillary Sinus
- BERRY, J. CLAYTON GREEN, W. H. PINCK, A. F. II and Others. Various Methods of Treating Cancer of the Tongue

Throat

- MOORE, R. S. Report of Case of Safety Pin in the Trachea

Neck

- HARRIS, D. J. The Influence of Intestinal Bacteria upon the Thyroid Gland
- BIRCHER, E. Iodine Therapy in Endemic Goiter and Its History
- KERR, W. J. and R. SK, G. V. Acute Yellow Atrophy Associated with Hyperthyroidism
- KERR, L. LEE, C. C. HYM, H. T. and LANGE, H. Studies of Isthmolegic Goiter and the Isthmolegic Nervous System. III. A Study of Fifty Consecutive Cases of Isthmolegic Goiter
- PROBSTER and HETTINGER. Recurrent Goiter
- DELA VOY, E. and DEVALLEY, A. Metastatic So Called Benign Goiters—Latent Thyroid Carcinoma Producing Metastases
- B. L. and V. L. Regional Anesthesia of the Neck and Upper Extremity. A Critical and Complete Review of Methods
- T. LEE, H. M. A Case Report of Cyst of the Epiglottis Presenting Some Unusual Features
- MCKINNEY, J. E. The Operation of Total Laryngectomy for the Cure of Intracranial Cancer of the Larynx
- GILBERT, B. Tumors of the Parathyroid Gland in Cases of Multiple Giant Cell Sarcoma of the Osseous System

SURGERY OF THE CHEST

Chest Wall and Breast

- ECHEGARAY, C. Radical Operation for Chronic Empyema
- DEBRA, L. S. Sudden Death Following Thoracentesis
- STARR, H. Plastic Mastectomy in Cases of Cancer of the Breast. Mastectomy Carcinomata

MCKELLIVER A. The Etiology of Cancer of the Breast in the Male

Trachea, Lungs, and Pleura

MOORE, R. S. Report of Case of Safety Pin in the Trachea

PRICE, C. H. and CAVE, H. W. Acute Suppurative Pleurisy: An Analysis of Ninety-Four Cases

PRINGLE, J. J. and BURRILL, L. S. T. Artificial Pneumothorax: Its Application to Cases Other Than Those of Pulmonary Tuberculosis

RITCHEY, C. and ROYAN, W. H. C. Surgery in the Treatment of Pulmonary Tuberculosis

SAKUBI, O. F. The Surgical Treatment of Tuberculosis of the Lungs

Oesophagus and Mediastinum

OSL, E. G. A Wire Ring in the Oesophagus

LARRY, F. H. Oesophageal Diverticula

MAY, C. H. The Treatment of Diverticulism of the Oesophagus

JAKOBI, K. Total Oesophagoplasty

Miscellaneous

PRINGLE, J. H. I. Intra-thoracic Catastrophes Simulating the Acute Abdomen

LEWIS, S. B. New Growths Within the Chest: X-Ray Diagnosis

HALL, J. N. New Growths Within the Chest

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings: Cranial Nerves

RAND, C. W. Outcome of the Skull: Report of Two Cases One Being Associated with Large Intracranial Ectotheloma

PRESTON, D. B. The Nature of Cerebral Hyperostosis Overlaying an Ectotheloma of the Meninges

MONAG, D. H. Brain Injuries Without Skull Fractures

GARY, F. C. The Use of Air in the Diagnosis of Intracranial Lesions: An Illustrative Case

MCCALL, A. D. Astrocytoma of the Brain with Report of Cases

KETTER, H. Roentgenological Observations on the Treatment of Epilepsy with Internal Irradiation of One Adrenal Gland

PURSER, L. The Surgical Treatment of Epilepsy: Twenty Years' Observations

ANASTAS, T. The Results of Palliative Trephination in Brain Pressure

WINTER, W. J. Ventriculography and Puncture of the Floor of the Third Ventricle

MARTIN, J. P. and GREENFIELD, J. G. Tumor in the Cerebral Vagina

F. AUSTIN, C. H. Some of the Surgical Problems in the Management of Pituitary Disorders

LANE, T. H. and SMITH, L. W. Hypophyseal Duct Tumor in Child of Ten

F. AUSTIN, T. Spontaneous Meningeal Hemorrhage

MARTIN, H. L. The Operative Treatment of Septic Meningitis

WALSH, F. M. R. A Case of Secondary Carcinomatous Infiltration of the Pia Arachnoid of the Brain Presenting Exclusively Ocular Symptoms During Late Menopausal Carcinomatosis

POLOVINSKI, M. and DEWITT, E. Glycemia and Glycosuria

FOLLEY, F. E. B. Alterations in the Contents and Absorption of Cerebrospinal Fluid Following Salt Administration

BORNOVI, L. Roentgen Treatment in Rebellious Trigeminal Neuralgia

Peripheral Nerves

SARGO, M. Regeneration of the Peripheral Nerve in Adults

COW, J. The Relation of Sciatia to the Sacro-Iliac Joint

VALLEY, B. The Freeing of Nerves

Sympathetic Nerves

BRYAN, J. The Trophic Function of the Sympathetic Nerves

MONROE, M. L. The Effect of the Ablation of the Superior Cervical Sympathetic Ganglia upon the Continence of Life

BRUNING, F. Aspects in the Pathogenesis of the Vasomotoric Neuroses: Further Experiences with Peri-Arterial Sympathectomy

FLORENCE, A. Observations on a Case of Peri-Arterial Sympathectomy

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

RAND, E. The Physiology and Pathology of the Peritoneum

CORTAIN, W. A. Lymphaticostomy in Peritonitis

Gastro-Intestinal Tract

KOZYLOV, N. Is the Stomach Focus of Infection

BRUNING, F. I. The Modification of Gastric Function by Means of Drugs

ITHERO, A. R. and ARNOLD, S. E. Observations on the Effect of Histamine on Human Gastric Secretion

FINARD, M. Syphilis of the Stomach

SCHUB, H. The Origin of Peptic Ulcer and Their Significance in the Diagnosis of Ulcer

H. E. L. Lesions of the Stomach with the Report of Cases

RAMOND, F. and ZOTT, P. A Search for Analytic Products Applied to the Early Diagnosis of Gastric Cancer

HARRY, R. L. and ORR, T. G. Chemical Changes in the Blood of the Dog After Pyloric Obstruction

HARRY, R. L. and ORR, T. G. Chemical Changes in the Blood of the Dog After Intestinal Obstruction

1	FRANKS, A. The Typical Forms of Late Obstruction of the Small Intestine Following Suppurative Appendicitis	4	MISCELLANEOUS	4
2	MILKINGRABOTH, E. T. New Cases of Stricture of the Small Intestine with Associated Pericolic Anemia	4	PETERS, J. J. Pericentostomum as an Aid in Drainage	4
3	SYMONDS, C. The Therapeutic Value of Vomiting in Intestinal Obstruction	4	EASTON, J. R. The Prevention of Peritoneal Contamination in the Drainage of Abdominal Abscesses	4
4	ALABOTT, C. R. and H. T. F. L. Intestinal Obstruction by Gall Stones	53	MITCHELL, J. F. Mesenteric Thrombosis	53
5	THOMAS, H. C. Chronic Antimesenteric Obstruction of the Duodenum	33	SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS	
6	CARST, A. and KILLER, J. The Diagnosis of Duodenal Ulcer by Means of Rapidly Made Series of Roentgenograms	33	Conditions of the Bones, Joints, Muscles, Tendons, Etc.	
7	SAUER, E. Roentgen Diagnosis in Diseases of the Duodenum	33	MARTIN, B. Bone Regeneration from the Pericentostomum Development of the Intercostal Ligation in the Forearm and Leg	4
8	ANGLI, A. Colloid Carcinoma of Vater Papilla A Clinical and Anatomical Pathological Study	34	FROMMELT, A. Lat. Rachitis, the Lat. Rachitic Origin of All Deformities of Growth and War Osteomalacia	4
9	RUSE, H. Roentgen Ray Treatment of Extensive Pleural Tuberculosis	34	GUTHRIE, B. Tumors of the Parathyroid Gland in Cases of Multiple Giant Cell Sarcoma of the Osseous System	43
10	LORENZ, H. Roentgen Observations on the Fate of Intestinal Irritations of Different Qualities, Especially from the Therapeutic Viewpoint	34	OSGOOD, R. B. Myeloma of the Vertebrae	44
11	ROBERTS, R. R. Secondary (Acquired) Megacolon	34	MARSH, A. W. The Theory of Muscle Atrophy on the Basis of Experimental Investigations	44
12	RANKIN, J. Pelvic Megacolon Colectomy After Its Application of the Colon into the Rectum	35	SCHUBERT, A. The Origin of Ischemic Contracture	44
13	ALMON, F. and VALENTI, A. A Case of Developmental Alterations of the Cecum and Pericolic Membrane	35	WOLF, H. F. Acute Subacromial and Subolethoid Bursitis Clinical Picture, Etiology and Treatment	45
14	SCHMIDT, E. O. The Treatment of Appendicitis with Complications	35	COLE, J. The Relation of Scrofula to the Sacro-Iliac Joint	46
15	JACKSON, A. S. Carcinoma of the Appendix	36	KRUMHOLTZ, E. External Rotation of the Leg in Diseases of the Hip Joint	46
16	Liver, Gall-Bladder, Pancreas, and Spleen		PERLBERG, G. and WELSH, G. The Development and End Results of Osteochondritis Deformans of the Hip Joint (Cal's Legg Perthes Disease) and the Relationship of This Disease to Arthritis Deformans	46
17	KEAR, W. J. and REID, G. V. Acute Yellow Atrophy Associated with Hyperthyroidism	46	BROOKS, M. Precocious Ossification of the Epiphyseal Lines and Its Relation to Chondroepithelioma	47
18	ARMSTRONG, C. R. and HILL, E. L. Intestinal Obstruction by Gall Stones	47	CHERRY, A. E. Primary Osteomyelitis of the Patella Report of Case and Review of the Literature	48
19	DEAN, V. R. and GRAY, W. E. A Functional Liver Test, An Experimental Study	47	MILLER, W. Callus Formation in the Metatarsals Without Fracture	48
20	HILL, KAPPA, T. and T. Cases of Anomalous Abscess of the Liver which are Treated with Iodine	48	VON DITTRICH, K. The Cause of Hallux Valgus	48
21	JONES, H. W. Pigment Metabolism and the Van den Bergh Test in Differentiated Obstructive and Non-Obstructive Jaundice with Five Case Reports	48	Surgery of the Bones, Joints, Muscles, Tendons, Etc.	
22	RUDERER, H. Traumatic Ruptures of the Bile Passages	48	LORENZ, THOMAS, J. T. The Treatment of Volkmann's Ischemic Contracture	48
23	HOWE, J. The Identification of the Common Bile Duct in the Presence of an Anomalous Condition of the Biliary Passages	49	HENDERSON, T. W. Certain Phases of Surgery of the Hand	49
24	JONES, T. S. and L. W. H. White Bile in the Common Duct	49	VON STURM, C. K. A Toplastic Transplantation of Bone in the Soft Parts	49
25	NEELING, M. G. Bile Duct Anomaly as Factor in the Pathogenesis of Cholestasis	49	ALLEN, H. V. The Choice of the Site for Amputation with Reference to Subsequent Prostheses	50
26	CLAIR, J. G. A Comparative Study of T. Series of Gall Bladder Lesions	49	Fractures and Dislocations	
27	POWELL, F. H. I. Junctions to the Spleen	49	GUTHRIE, H. The Prognosis of Dislocations of the Shoulder Joint	5
28	OLIVER, F. R. and JACOB, H. G. Report of Case of Toxicemia of Pregnancy with Acute Yellow Atrophy of the Liver	50	FAIRBANKS, H. A. T. Operative Treatment of Dislocated Hips, Congenital and Pathological	51

- STEVENS, R. Fracture of the Spine of the Tibia.
 LECHE, G. The Treatment of Dupuytren's Fracture by Screwing on the Internal Mallochia.
 VOLLEY, H. An Undescribed Fracture of the Cal cancer.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

- HANDER, A. W. Canoid Arteries: What Is It How and When Can It Be Treated?
 GUYOT, J. and J. J. The So Called Effort Thrombophlebitis of the Artery Vein
 MITCHELL, J. F. Mesenteric Thrombosis
 KEY, E. Embolism in the Treatment of Cerebral Disturbances in the Extremities

Blood and Transfusion

- HANDER, R. L. and OER, T. G. Chemical Changes in the Blood of the Dog After Pyelic Obstruction
 HANDE, R. L. and OER, T. G. Chemical Changes in the Blood of the Dog After Intestinal Obstruction
 ROSARIO, S. and J. B. M. Arterial Pressure in the Different Types of Anesthetics
 DREWIS, H. Blood Sugar Determinations in Cases of Operation Performed under Local Anesthetics and Ether Anesthetics
 WRIGHT, A. F. New Principles in Therapeutic Inoculation
 LE CALVE, J. Vascular Crisis Produced by Constriction of an Extremity
 MISO, F. Research on Variation in Blood Groups
 LEBRON, J. D. A Preliminary Report on Blood Transfusion in Malnutrition and Infantile Atrophy

Lymph Vessels and Lymph Glands

- MAISON, G. The Demonstration of the Lymph Radicles in Hemorrhoids and Anal Tumors
 SERRUVE, W. E. The Results Obtained in Elephantiasis Through the Kosselstein Operation

GYNECOLOGY

Uterus

- HINT, J. C. and MAIER, C. The Palliative and Operative Treatment of Prolapse of the Uterus
 KNOX, I. Menstruation—An Inquiry into Its Etiology
 BLANCHER, G. The Treatment of Menorrhagia by Radium
 KLOUWER, J. B. Radiotherapy or Surgical Treatment in Fibromata of the Uterus?
 SCHMIDT, H. The Treatment of Carcinoma of the Uterus with Special Reference to Surgery (the X Ray and Radium)
 MARLE, A. F. The Morphological Histology of Adenocarcinoma of the Body of the Uterus in Relation to Longevity Study of 86 Cases

Adrenal and Peri-Uterine Conditions

- ORRIS, S. H. and HARRIS, W. Experimental Investigation of the Value of the Various Commercial Ovarian Extracts
 WILK, H. A. A Contribution to the Study of the Effects of Radium upon Rabbit Ovaries

External Genitals

- DOUGAL, D. Primary Carcinoma of the Vagina Treated by Hysterovagnectomy
 HOLLAUD, E. A Case of Primary Carcinoma of the Vagina
 STEVEN, T. G. Squamous Epithelioma of the Vagina
 SPENCER, H. R. Adenoma of the Vaginal Fornix Simulating Cancer of the Cervix

OBSTETRICS

Pregnancy and Its Complications

- WILL, W. E. and ALLEN, R. W. A New Measure ment as an Aid in the Diagnosis of Rachitic and Generally Contracted Pelvis
 OASTLER, F. R. and JACOB, H. G. Report of Case of Toxicity of Pregnancy with Acute Yellow Atrophy of the Liver
 PETERSON, R. Toxicosis of Pregnancy, Including Pre-Eclampsia, Eclampsia, and Nephritis. The Indications for and the Methods of Artificial Interruption of Pregnancy

Labor and Its Complications

- HARRIS, J. A. Functional Dyslexia in Normal Pelvis Recognition and Management
 HARPER, P. T. Clinical Aspects of Blood Loss in Labor

Newborn

- STILL, G. I. Attacks of Arrested Respiration in the Newborn

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

- DRABERICK, W. H. Syphilis of the Adrenal
 ZIEGLER. Experiments in Pneumocystography of the Renal Bed by Rosenstein's Method
 NEUBERT, K. The Treatment of Reflex Asthma
 VAN DERHOOF, D. and HASKELL, C. C. The Relation of Acidosis to Nitrogen Retention in Experimental Nephritis
 MEIER, H. Tuberculosis of the Kidney and Nephrectomy
 MULLER, G. P. Abnormality of the Kidney Pelvis with Pyonephrosis
 GRAUBER, M. The Anatomy and Clinical Aspect of Epithelial Neoplasms of the Renal Pelvis
 HANLEY, R. S. On Subcapsular Pyelotomy, with Remarks on the Origin and Treatment of Renal Calculi

- LITHIA** M. The Diagnosis of Malignant Tumors of the Kidney
- PRICE, H. T.** Urinary Calculi and Sarcoma of the Kidney in Children
- Bladder, Urethra, and Penis**
- CHESBON, C. R. B.** Partial Spontaneous Inversion of Diverticulum of the Bladder with Dumb-bell Stone
- HARRIS, T. A.** Obstruction of the Uretrovesical Valve
- HIRST, J. C.** The Rapid Cure of Cystitis in Children
- GORASCH** The Treatment of Tuberculosis of the Bladder
- ZIMOWITZ, F.** A Case of Hemorrhagic Purpura of the Bladder
- SMITH, G. G.** The Treatment of Cancer of the Bladder by Radium Implantation
- BLECHNER, L.** A New Method of Applying Radium Through the Cystoscope
- COBBINS, B. C.** Diathermy in the Treatment of Tumors of the Lower Urinary Tract
- PATTON, V.** Resection of the Urethra with Mobilization and Suture in Constrictor Strictures and Fistulae
- Genital Organs**
- HORN, W. and ORATOR, A.** Hypertrophy of the Prostate
- VON BORJA, J.** Adenoma of the Accessory Glands Suggesting Prostatic Hypertrophy
- MANNION** Epididymectomy in Genital Tuberculosis
- ABRAHAMSON, G. D.** Anomalies in the Descent of the Testicles in the Weak Minded
- Mammary Glands**
- BALLANCE, W. F.** The Relation of the General Practitioner to the Urologist
- KETTER, L. D.** The Etiology of Urinary Lithiasis: An Experimental Study
- BOHRER, R.** The Operative Treatment of Genital Tuberculosis
- PHYSICO-CHEMICAL METHODS IN SURGERY**
- Röntgenology**
- JARVIS, D. C.** The Effect of Small Doses of Röntgen Ray in Certain Forms of Impaired Hearing
- McCOY, J.** The Treatment of Defective Hearing by Small Doses of X Rays
- CHILDS, S. B.** New Growths Within the Chest X Ray Diagnosis
- HALL, J. N.** New Growths Within the Chest
- GRANT, F. C.** The Use of Air in the Diagnosis of Intracranial Lesions: An Illustrative Case
- KURTZMAN, H.** Roentgenological Observations on the Treatment of Epilepsy with Intermittent Irradiation of One Adrenal Gland
- BORDOWITZ, L.** Roentgen Treatment in Rebellious Trigeminal Neuralgia
- CARRIE, A. and KELLER, J.** The Diagnosis of Duodenal Ulcer by Means of Rapidly Made Series of Roentgenograms
- SATCHEL, F.** Roentgen Diagnosis in Diseases of the Duodenum
- KIM, H.** Roentgen Ray Treatment of Extremity Metastatic Tuberculosis
- LOREN, H.** Roentgen Observations on the Effect of Latent Irradiations of Different Quantities, Especially from the Therapeutic Viewpoint
- PETERS, J. J.** Pneumoperitoneum as an Aid in Diagnosis
- SCHMIDT, H.** The Treatment of Carcinoma of the Uterus, With Special Reference to Surgery, the X Ray and Radium
- ZIEGLER** Experiences in Pneumoroentgenography of the Renal Bed by Rosenbaum Method
- JOHNSON, G.** The Rational Roentgen Ray Dosage in the Treatment of Surgical Diseases
- MAXIMO, A. A.** Studies on the Changes Produced by the Roentgen Rays in Inflamed Connective Tissue
- KOH, F. and VOLLMER, K.** Biological Investigations of the Effect of Irradiation on Carcinoma
- Radium**
- BERRY, J. CLAYTON, GREEN, W. E., PRICE, A. E. H. and Others.** Various Methods of Treating Cancer of the Tongue
- BLACKER, G.** The Treatment of Mesothelioma by Radium
- KOCHER, J. B.** Radiotherapy or Surgical Treatment in Fibrosarcoma of the Uterus?

- WARR, H. A. A Contribution to the Study of the Effects of Radium upon Rabbit Ovaries
 SMITH, G. G. The Treatment of Cancer of the Bladder by Radium Implantation
 BURGER, L. A New Method of Applying Radium through the Cystoscope

Dysentery

- COMBS, B. C. Dysentery in the Treatment of Tumors of the Lower Urinary Tract

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- POLOVINSKY, M. and DEMET, E. Glycemia and Glycosuria
 FOLEY, F. E. B. Alterations in the Currents and Absorption of Cerebrospinal Fluid Following Salt Administration
 KOPLOFF, N. I. The Stomach: Focus of Infection
 MACLE, G. The Demonstration of the Lymph Radicles in Human and Animal Tissues

- 6 KROON, J. Menstruation—An Inquiry into Its Physiology 38
 7 CARRIE, C. W. Studies in Fibrinolysis: Physical Trauma 8
 73 BATTING, F. J. Iosabon 8
 73 BLOOM, L. Traumatic Epithelial Cysts 83

General Bacterial Infections; General Mycotic Infections

- 73 REED, J. C. The Treatment of Cutaneous Anthrax with Few Remarks on Prophylaxis 83
 WHITE, P. A. Actinomycosis: Diagnosis and Treatment 84

Surgical Pathology and Diagnosis

- 5 RABOND, F. and LIZINE, P. A Search for Antolytic Products Applied to the Early Diagnosis of Gastric Cancer 3
 5 MARBLE, A. E. The Morphological Histology of Adenocarcinoma of the Body of the Uterus in Relation to Longevity: Study of 86 Cases 6
 36 KRIEGER, A. D. A Rapid Technique for Preparing Histologic Sections by the Paraffin Method 84

BIBLIOGRAPHY

Surgery of the Head and Neck		Gynecology	
Head	85	Uterus	96
Eye	85	Adnexal and Peri-Uterine Conditions	97
Ear	86	External Genitals	97
Nose	86	Miscellaneous	97
Mouth	86		
Throat	87	Obstetrics	
Neck	87	Pregnancy and Its Complications	98
		Labor and Its Complications	98
		Puerperium and Its Complications	99
		Newborn	99
		Miscellaneous	99
Surgery of the Chest			
Chest Wall and Breast	88	Genito-Urinary Surgery	
Trachea, Lungs, and Pleura	88	Adrenal, Kidney, and Ureter	99
Heart and Pericardium	88	Bladder, Urethra, and Penis	99
Esophagus and Mediastinum	88	Genital Organs	99
Miscellaneous	89	Miscellaneous	
Surgery of the Nervous System			
Brain and Its Coverings: Cranial Nerves	89	Surgical Technique	
Peripheral Nerves	89	Operative Surgery and Technique: Postoperative	
Sympathetic Nerves	90	Treatment	
		Anaesthetic Surgery: Treatment of Wounds and	
Surgery of the Abdomen		Infections	0
Abdominal Wall and Peritoneum	90	Anesthesia	
Gastro-Intestinal Tract	90	Surgical Instruments and Apparatus	
Liver, Gall Bladder, Pancreas, and Spleen	91		
Miscellaneous	91	Physico-chemical Methods in Surgery	
		Röntgenology	0
Surgery of the Bones, Joints, Muscles, Tendons		Radium	03
Conditions of the Bones, Joints, Muscles, Tendons	91	Miscellaneous	5
Surgery of the Bones, Joints, Muscles, Tendons	91		
Fractures and Dislocations	95	Miscellaneous	
Orthopedics in General	95	Clinical Entomology—General Physiological Conditions	3
		General Bacterial and Mycotic Infections	3
Surgery of the Blood and Lymph Systems		Surgical Pathology and Diagnosis	04
Blood Vessels	95	Experimental Surgery	04
Blood and Transfusion	95	Hospitals, Medical Education and History	04
Lymph Vessels and Glands	96	Legal Medicine	04

THE sources of surgical literature are so many and varied, the number of periodicals appearing each week and month so great, that the surgeon who wishes to keep abreast of the important developments in general medicine and of every development that concerns his own special field is frequently at a loss how to direct his reading most effectively. The younger surgeon who is considering as he plans his medical library what periodicals will best suit his needs and his purse or the older surgeon who wishes to add to his library to the best possible advantage, finds it difficult to choose from the abundance of journal that claim his attention. It is the purpose of the editors in this succeeding numbers of the *INTERNATIONAL ABSTRACT OF SURGERY* to point out the chief sources of surgical literature, to mention the important journals in our own and other countries, and to indicate briefly their character and scope.

In recent years there were three main sources of surgical literature: the university groups, devoted primarily to the teaching of medical science; the clinical groups, devoted primarily to the practice of medicine and surgery; but of constantly increasing importance in stimulating surgical progress the research groups, devoted primarily to advancing surgical science through original investigation and experimental surgery. Today these groups are merging into one and as they are becoming component parts of one unified group progress is becoming constantly more rapid and definite.

From the earliest days of medical science the universities have furnished inspiration and stimulus to medical progress. In our own country, Philadelphia, the seat of the first American medical school organized in 1765 is the Medical Department of the University of Pennsylvania, was also the home of one of the first American medical journals, the *Philadelphia Journal of the Medical and Physical Sciences* which became in 1827 our well-known *American Journal of the Medical Sciences*. Men who were teachers were among its earliest contributors. Today as then an important share of the worthwhile contributions to surgical literature come from men who are actively interested in the teaching of surgery.

The growth of the "group system" of medical practice in America has given unusual opportunities for the study of clinical disease entities and of surgical treatment, by affording one man or one group of men the opportunity of observing and treating large numbers of similar cases. The

excellence of American surgical literature is in no small degree due to the numerous and able contributions coming from the Mayo Clinic, the Johns Hopkins Hospital Clinic, the Lakeside Clinic of Dr. Crile and his associates, and from other similar groups.

Of ever increasing importance to the development of surgical progress is the work of the investigative pioneers. From the Rockefeller Institute from the Wistar Institute of Anatomy from the Department of Surgical Research of the University of Pennsylvania, of the University of California from practically every one of our larger universities and from similar institutions in other countries come contributions reports of original investigations that are constantly being translated into terms of improved surgical treatment.

From these sources, largely our surgical literature is drawn. In succeeding numbers, beginning with our own country we will mention briefly the most important and helpful journals, particularly those of surgical importance.

OUT of a large number of interesting and suggestive abstracts in this month's issue a few are particularly worthy of attention. A discussion from the London Medical Society on the treatment of carcinoma of the tongue (p. 8) reflects the views of a number of leading British surgeons on this difficult problem.

Periarterial sympathectomy (pp. 27-28) continues to arouse a great deal of interest, particularly in France and Germany. The treatment of reflex anuria by anesthetizing the splanchnic nerves (p. 67) is a new suggestion in connection with the surgery of the sympathetic nerves.

New methods of estimating the functional capacity of the liver (p. 37) are commanding increasing attention.

Lymphaticostomy as a therapeutic measure in suppurative peritonitis (p. 29) transfusion for malnourished infants (p. 36) the use of magnesium sulphate as a sedative (p. 77) are all therapeutic suggestions worthy of serious consideration.

A discussion on the prognosis and treatment of dislocation of the shoulder joint (p. 50) based on a series of 153 cases, is of very practical importance.

Experimental investigations of the influence of the X-ray on inflamed connective tissue (p. 80) and of the effect of radium on normal nervous tissue are of particular interest because of the constantly increasing use of these agencies for therapeutic purposes.

INTERNATIONAL ABSTRACT OF SURGERY

JULY 1923

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Rand C. W. Osteoma of the Skull. Report of Two Cases, One Being Associated with Large Intracranial Endothelioma. *Arch Surg* 93, 7, 573

A close relationship between hyperostosis osteoma of the skull and intracranial endothelioma is becoming more generally recognized. Cushing believes that at least 25 per cent of cases of proved endothelioma present demonstrable thickening of the overlying bone.

Mallory states that these so called endotheliomata arise from the arachnoid villi rather than from the dural endothelium. In fact he denies the existence of dural endothelioma, maintaining that the under surface of the membrane is lined with fibroblasts rather than with endothelial cells. He therefore suggests the term arachnoid fibroblastoma as preferable from morphological standpoint. He contends that since these tumors derive their blood supply from the dura, they may invade the skull and scalp but never invade the brain tissue proper.

Rand reports two cases the first, case of hyperostosis with an undulating endothelioma which filled and grew from both sides of the longitudinal sinus and the second case of simple osteoma of the skull with no true intracranial growth.

The first patient was a man 3 years of age who had always been athletic but had never received any definite skull injury. The first manifestation of disease was a small, hard, bony lump on the crown of the head near the junction of the sagittal and coronal sutures. A year later following an acute cold the lump was found to be larger than before, and months later after exposure to the sun a convulsion occurred. Mental symptoms then became manifest, and in a period of six months there were five convulsions (diagnosis of Jacksonian epilepsy) as made. At operation, an enormously thickened piece of bone was removed. The patho-

logic diagnosis was benign osteoma showing irregular growth of the bone.

After the operation the patient was much improved but about six months later had another convulsion, and in the following nine months nine attacks at irregular intervals. He was able to walk, but suffered from mental disturbances. Bromides were administered during this interval. At examination after the last convulsion the patient was found very nervous and irritable and complained of headache. Neurological examination was essentially negative except for the eye grounds which showed blurring of the disc margins, most marked on the right side. The X-ray demonstrated bony elevation with tremendous thickening of the skull near the coronal and sagittal sutures.

In the second operation large osteoma lying directly over the longitudinal sinus was removed. Convalescence was rapid and the patient returned to his work but was kept under the influence of bromides and luminal. He continued to be irritable and nervous and about year and seven months after the second operation had another convulsion which was severe and generalized. This was followed by two more about a month apart. Mental disturbances then became more prominent. Physical and neurological examinations were again negative except for blurring of the optic discs. Ventriculography demonstrated absence of air in the left ventricle and a distinct notch on the upper surface of the anterior horn of the right ventricle. This was attributed to a large growth projecting into each hemisphere especially on the left side.

When the skull was again opened a tumor was found growing from both sides of the longitudinal sinus involving the sinuses and apparently invading the brain proper. On gross examination the neoplasm appeared to be a sarcoma. No line of demarcation could be made out. Sections were made and the wound closed.

The microscopic sections revealed an endothelioma of the meninges. A week after the last operation

the wound as again opened and the tumor removed en masse with 1 cm. of the longitudinal sinus. The growth was encapsulated and weighed 135 gms. A fascia lata graft was placed over the skull defect and the wound closed.

At present the patient's mental symptoms have improved, he no longer uses sedatives and is free from epileptic seizures. He has gained in weight and is again working in his former capacity.

The second case was that of a man 45 years of age who entered the hospital with complaint of epilepsy and severe frontal headaches of four years duration, attacks of mental derangement, weakness of the left arm and leg, and difficulty in articulation.

Examination revealed marked mental agitation. The eye grounds showed overfilling of the veins and blurring of the disc margins, particularly on the right side. Slight taxis of the upper extremities was present. There was definite weakness of the muscles of the left hand. The deep reflexes were increased on the left side of the body and there was positive Babinski on the same side. The X-ray revealed dense shadow in the right frontal region, about 1 cm. in diameter above the middle of the orbit. The Wassermann reaction was negative and the blood and urine showed nothing abnormal.

At operation the tumor was removed with a small margin of normal skull. It was necessary to open the top of the right orbit. A dural flap was turned back and the brain inspected but no evidence of an endothelioma was found. The operation was followed by an uneventful recovery.

Three months later the patient was free from headache and had had no further epileptic seizures. His mentality was clear, the nervousness, as less, and the paralysis of the left side had practically disappeared. DEAN H. KELLY, M.D.

Wheeler W. Traumatic Intracranial Aerocele. *Lancet* 1915, 539.

In case diagnosed as fracture of the tensor fossae of the base of the skull there was an escape of air and cerebrospinal fluid beneath the dura as indicated. A distinct respiratory movement of the frontal lobe was noted. Another interesting feature in this case was the early dilatation of the pupil on the affected side, the absence of compression and before the onset of meningitis.

Though the patient was benefited to some degree by the operation, fatal meningitis developed. Autopsy revealed fracture extending through the right side of the ethmoid bone and involving the sphenoid. A probe passed through the fracture appeared at the anterior nares.

Traumatic intracranial aerocele is most commonly caused by fracture in the frontal region involving the sinuses, but may follow any compound fracture with a dural tear. The air is always intra-dural. Its presence may not be suspected until it is revealed by the X-ray.

Reference is made to ten cases reported by Grant. In cases of aerocele found immediately following

injury operation should be performed and an attempt made to close the dural tear; if several days have elapsed, conservative treatment allowing time for absorption is advisable.

This condition is of interest in that it constitutes another certain diagnostic sign of fracture of the base of the skull. V. E. DUNN, M.D.

Pheumster D. B. The Nature of Cranial Hyperostosis. *Overlying Endothelioma of the Meninges*. *Arch. Surg.* 1915, 61, 554.

The old interpretation of cranial hyperostosis overlying endothelioma of the meninges as non-tumorous new bone formation caused by stimulation of the overlying bone by the meningeal tumor disregarded the fact that the bone becomes infiltrated by tumor. Pheumster reports two cases and gives the microscopic findings.

In the first, that of a man 4 years of age, general symptoms of brain tumor had been present for about three years, but the hyperostosis in the right occipital lobe was first discovered at autopsy. Microscopic examination of the hyperostosis and the portion of skull from which it sprang showed infiltration by endothelioma of the same character as the intradural tumor but the new bone about the surface of the external layer was definitely non-tumorous. In the region of most marked growth, tumor cells were largely absent. Bone formation from tumor cells was nowhere to be seen.

The second case that of a man 3 years of age, presented large oval painless swelling of bony hardness in the left frontoparietal region. There was entire absence of nervous symptoms. A roentgenogram showed a shadow in the region of the tumor which was most dense in its central portion. A faint, but definitely radiating shadow extending beyond the outline of the old calvarium was cast by the new bone. A probable diagnosis of meningeal endothelioma with overlying hyperostosis was made and operation performed. The thickened skull was removed, the dura opened, and a broad, flat tumor found attached to the inner surface. A roentgenogram of section of the calvarium from which the hyperostosis sprang showed the new bone radiating from both the inner and outer surfaces of the old bone. The inner layer showed plainly that ossification had proceeded from the inner table toward the dura. Microscopic examination showed tumor infiltration of the calvarium and of the new bone springing from it. The tumor, as an endothelioma like the primary growth. There were, however, numerous areas of new bone which contained little tumor. The external hyperostosis contained the least amount. The examination left no doubt that the new bone was not tumor.

The findings in these two cases suggest that the primary tumor arises inside the dura from cells connected either with its inner lining or with arachnoidal villi which enter it. As the tumor grows, its cells penetrate the dura and invade the overlying bone where they exert stimulating influence on

salting in the formation of a hyperostosis consisting of two intermixed portions, namely endothelial tumor and a newly formed non-tumorous bony framework. The hyperostosis is an instance of osteoplastic invasion of bone by a mesoblastic tumor originating outside the skeleton. Invasions of bone by all other non-bony mesoblastic tumors are osteoclastic. Analogous changes are produced by carcinoma metastases in bone while usually osteoclastic, they may in certain instances, as when from carcinoma of the prostate stimulate new bone formation and ossify throughout their substance.

A third case is reported, which differs from the others in that it included local bone destruction. The subject, a woman of 69, had had for twelve years bony enlargement in the frontoparietal region and, during the last two years, symptoms of cerebral involvement. Roentgenographic and microscopic examinations showed that an endothelioma of the dura had produced, first, hyperostosis, then erosion of the calvarium from within outward, and, lastly a layer of unossified tumor external to the hyperostosis.

FLORENCE CARPENTIER

EYE

Fraxier C. H. and Houser, K. M. Unilateral Exophthalmos. A Clinical Report of Five Cases. *Surg Clin N Am* 9 3 34, 8

Unilateral exophthalmos is not rare. Five cases varying widely in pathology are cited to illustrate the diversity of the causes of this condition. The first case was that of a man 140 years who had unilateral blindness with nausea and vomiting followed by ptosis. An operation on the eye revealed no tumor but the nausea and vomiting ceased. The cause of the protrusion could not be determined.

The second case was that of a woman with an acute subperiosteal abscess near the orbit. The exophthalmos was cured by evacuating the abscess and cleaning it with Dakin solution.

In the third case that of a woman 41 years of age a slight laryngitis was followed in a week by severe headache, fever of 107 degrees F and exophthalmos. A diagnosis of cavernous sinus thrombosis was made, but not verified as autopsy was not allowed. Other conditions were ruled out by exploratory operations.

The fourth case was that of a 36-year-old woman who had had severe pain in and above the left eye intermittently for six years occasional vomiting, exophthalmos, and involvement of the cranial nerves. A diagnosis of flat lesion at the base of the brain was made. As operation was not allowed, the diagnosis was not verified.

The last case was that of a boy with exophthalmos accompanied by thrill which developed six weeks after he struck his head in a fall. The thrill was relieved by closing the internal carotid artery but the pulsating exophthalmos persisted.

MARION H. HOBART, M.D.

Wright, R. E., and Barnard, T. W. The Importance of Radiography in Doubtful Cases of Optic Atrophy with Special Reference to Pituitary Disease. *Br J Ophth* 9 3 74, 3

Wright and Barnard report five cases of optic atrophy with pituitary changes. Two causes of error in the diagnosis of optic atrophy due to hypophyseal involvement are the frequency of optic atrophy of indefinite etiology and the high percentage of cases which show few glandular symptoms when the pituitary is involved. The authors believe that in all cases of optic atrophy in which the etiology is not definite an X-ray examination of the region of the sella should be made.

VIRGIL WESCOTT, M.D.

Wescott, C. D. Some Practical Points in Refraction. *Am J Ophth* 9 3 74, 304

A routine method of examining and correcting ametropia which is based on thirty five years experience is here outlined. All the work is done by appointment, and dequart time is demanded. The history is taken, but only the essential facts are noted in the record. The external eye is examined and the vision determined. The fundus is examined through the small pupil. A mydriatic is then used, regardless of the patient's age, the fundus is re-examined, and ophthalmoscopic examination is made.

The ophthalmometer is used in all cases. Then, after a few minutes of rest, the refraction test is done. Before the patient leaves the office, eserine subconjunctiva is used to reduce the pupil. A post-cycloplegic test is made two days later and the accommodation is measured in both young and old, both eyes together and separately.

In examining under tropene two drops of a percent solution are instilled in each eye three times daily until ordered discontinued. The subjective test is repeated daily until the results are the same on two succeeding days. VIRGIL WESCOTT, M.D.

Griscorn, J. M. Headache from the Ophthalmological Standpoint. *Pennsylvania M J* 9 3 xxvi 359

Since Mitchell and Thompson called attention to the relation between eye strain and headache, no study of a case of chronic headache is complete without refraction under cycloplegia. In all headaches are due to eye strain, and in the study of each case it must be borne in mind that the etiology of headaches is not so simple as is sometimes believed. Persons with tonometers are more likely to suffer from eye strain than normal persons. On the other hand, small uncorrected errors of hyperopic astigmatism may be the cause of functional nervous disorders. While it is not possible to state the percentage of headaches due to eye strain, errors of refraction have place in the vicious circle of cause and effect, and their elimination is important.

VIRGIL WESCOTT, M.D.

Hentger J. D. Some Observations on Eye Lesions of Nasal Origin. *South M J* 9 3, xvi, 8

By reporting six cases, Hentger calls attention to the intimate relationship between diseases of the eye and nose. He emphasizes the importance of distinguishing between the suppurative and non-suppurative diseases of the nose and accessory sinuses. The study of ocular lesions is complete only if a careful study is made of the posterior ethmoid region. X-ray examination of the sinuses has proved unreliable and has often led to operative interference which was not justifiable. VINCENT WILCOX M.D.

Fernando, A. S. Report of Cases of Melanoma of the Conjunctiva. *Arch Ophth* 9 3 li, 68

Fernando reports the removal of melanosarcoma of the conjunctiva. As vision was only slightly affected, the patient refused to allow removal of the eye. Ten years later he returned with generalized tumor masses in the skin and complaint of headache, dizziness, and anisotia. The tumor masses are melanosarcoma. There was no recurrence of the tumor in the eye ball. VINCENT WILCOX M.D.

Reeder W. G. Tuberculin as Therapeutic Agent in Oint Form of Keratitis. *Illness M J* 9 3, xliii, 24

Reeder gives in some detail the histories of five cases of phlyctenular disease of the cornea in which tuberculin was used. He does not claim that all of these are tuberculous but 11 of them presented symptoms of phlyctenula. The diagnostic dose of old tuberculin was given every alternate local, focal, and general reaction were obtained within forty eight hours. Negative phase in which the eye became definitely worse for a few days was followed by positive phase which went on to cure or distinct improvement. In some cases several doses of mgm were given, and usually there was no eye flare up following the repeated doses.

Commenting Reeder makes this statement: "Local irritation must have its negative stage followed by positive stage if therapeutic results are to be obtained. Lesions purely in the negative stage may not be benefited by protein injections. In this connection he cites the case of a young man who was given large doses of old tuberculin every two weeks for the treatment of tuberculous glands. Both eyes developed superficial keratitis but these cleared up after the treatment was stopped.

In Reeder's opinion the treatment is specific.

THOMAS D. ALLEN, M.D.

Verhoeff F. H. A Case of Mesoblastic Leiomyoma of the Iris. *Arch Ophth* 9 3 li, 3

In none of the few reported cases of mesoblastic leiomyoma of the iris was evidence presented proving conclusively that the tumor was myoma.

The author's case is of interest chiefly because it was the first in which a tumor of the iris was demonstrated to be myoma by special staining.

The long spindle shaped appearance of the cells, the typical rod shaped nuclei, the tendency of the cells to occur in bundles with nuclei arranged in rows, and the presence of fibrils coursing along the cells and their terminal processes, as shown by Mallory's phosphotungstic haematoxylin stain, left no doubt as to the nature of the growth. In sections of a number of spindle cell sarcoma of the choroid and ciliary body examined, no fibrils were found in relation to the tumor cells proper but fibroglia fibrils were demonstrated in the connective tissue stroma.

Another important difference between myoma and spindle cell sarcoma lies in the fact that myoma cells are truly spindle shaped whereas the cells of a spindle cell sarcoma terminate in, or send off laterally several ill defined irregular processes which anastomose with neighboring cells and thus form definite syncytium. That the tumor in the other case was benign was evident from the following facts: 1. Although a large portion of the growth was left in the anterior chamber at the first operation it did not increase appreciably in size in a period of sixteen years or invade the structures at the filtration angle.

The original tumor arose from the surface of the iris by a small constricted base, point of difference from sarcoma that might prove of clinical value.

3. The original tumor had not invaded the iris stroma.

4. There was no mitosis.

In normal eye smooth muscle is derived from the pigment epithelium of the iris (dilator and sphincter pupillae) or the ciliary stroma (ciliary muscle). Since the tumor described arose from the anterior surface of the iris near its root and most likely as entirely unpigmented and nowhere connected with the iris muscles of pigmented epithelium, it seems probable that it originated from stroma cells of the embryonic iris, possibly from misplaced cells which ordinarily would have taken part in the formation of the ciliary muscle.

C. CORBIN Y. WERT M.D.

Benedict W. L. Tumors and Cysts Arising Near the Apex of the Orbit. *Am J Ophth* 9 3, 4, 23

Small tumors may exist in the posterior part of the orbit for years, growing very slowly and interfering only slightly with ocular refraction and vision. The earliest symptoms in such cases is protrusion of the globe or proptosis. This may precede visual disturbances by several years, and disturbance of motility by several months, depending on the size of the tumor. Next to proptosis, exophthalmos of the lids is the most common symptom. Swelling of the lids is usually greatest when the tumor overgrows the globe in the upper and nasal quadrants. This sign may serve to indicate the most probable location of the tumor.

The following operation is suggested for tumor of the soft tissues in the orbit:

The soft parts should be cut down to the bone about 6 mm. above the superior orbital rim. The periorbital around the margin of the orbit, and the peri-orbita on the superior and nasal sides should be elevated and the contents of the orbit depressed and retracted until finger can be easily inserted almost to the apex. The orbital contents may then be palpated, and even a small tumor felt anywhere within the orbit. The peri-orbita should then be incised nearest the location of the tumor and the mass removed by blunt dissection by small scissors or forceps, with minimal mutilation of the orbital structures.

The Kroenlein operation is distinctly valuable for removing tumors within the muscle cone when it is desired to save the globe. The contour of the face and orbit, however, often renders the operation difficult as the lateral wall of the orbit may be rather thick and, when turned back, allow little additional room for work.

Eight cases of orbital tumor arising from the optic nerve or its sheaths are reported. In three cases the tumor was located in the right orbit, and in five cases in the left. Good vision was retained in the eye of the affected orbit in two cases, but vision was lost in two cases and reduced to 6/3 or less in four cases. The average proptosis was 7.5 mm. and the duration of proptosis from 1 month to 1 year. Papilledema of 1 diopter or more limited to the eye of the affected orbit, was present in four cases, and optic atrophy in 1 case. The fundus was negative in 1. The tumor was removed by the Kroenlein operation in three cases, by the direct frontal route in four cases, and after enucleation of the eye in one case. There were four endotheliomas, three gliomas, and one neurocytoma in the group. Good results were obtained in six cases. In two cases brain tumor was found later. In 10 cases in which the tumor was removed by the Kroenlein operation the globe was preserved, but in one of these the removal of the eye was necessary eight months later because of phthisis bulbi. In the other eye, slight enophthalmos resulted but there was no change in the size of the globe or restriction of its motility.

Goldenberg, M. Glaucoma Surgery. *Illnesses of the Eye*, 9, 3, 1914, 9.

Goldenberg has done the iridotomy operation for glaucoma for about five years. In examining some of his earlier cases he is highly gratified with the results.

The conclusions drawn with regard to the procedure are as follows:

1. Drainage takes place into the subconjunctival spaces.

A lowered tension is retained for a long period.

3. The operation is easy to perform and without danger.

4. Other procedures can be resorted to if necessary.

THOMAS D. ALLY, M.D.

EAR

Fraser J. B. The Pathological and Clinical Aspects of Deaf Mutism. *Laryngoscope* 9, 3, 1914, 77.

Fraser suggests that instead of dividing cases of deaf-mutism into congenital and acquired, they be classified more scientifically into (1) those due to an error in development (constitutional, developmental or congenital deaf-mutism) and (2) those due to trauma or inflammatory conditions (acquired or inflammatory deaf-mutism).

These major divisions may be further divided as follows:

1. Congenital or developmental deaf-mutism
 a. Endemic or crinkle deafness (Slebenmann's type). Most of the subjects are complete cretins. They show only sound conduction deafness. The chief pathologic changes are in the middle ear. Some observers find the inner ear normal, while others find degenerative changes in Corti's organ, but only slight change in the nerve and ganglia. Opinions as to the etiology of the condition vary.

b. Sporadic congenital deafness (1) plasma of the whole labyrinth (Michel type), (2) cases in which both the bony and membranous labyrinths are affected (Mendini or Alexander type) (3) congenital malformations affecting both the cochlea and vestibular apparatus and (4) sacculocochlear degeneration (Scheibe type).

It is suggested that hereditary deafness and otosclerosis be regarded as different forms of one and the same pathological process.

Caster is quoted as stating that in his experience deaf mutism is usually due to changes in the cortical hearing area and much less often to changes in the ear. He believes the cortical changes are due to meningitis which is sometimes intra-uterine.

Acquired or inflammatory deaf mutism, the pathology of which is the pathology of labyrinthitis occurring in intra-uterine or post fetal life.

A. Deaf mutism due to trauma following fracture of the cranial bones, which involves the labyrinth on both sides.

B. Deaf mutism due to labyrinthitis following middle ear suppuration.

C. Deaf mutism due to labyrinthitis following purulent meningitis. The meningitis may occur during intra-uterine or post fetal life. Post fetal meningitis is the most frequent cause of acquired deaf mutism. The majority of cases are due to epidemic meningitis, measles, scarlet fever, "congenital syphilis," or labyrinthitis due to osteomyelitis or mumps.

Congenital deaf-mutism occurs with equal frequency in both sexes. Acquired deaf-mutism is much more frequent in males.

Apparently about 2 per cent of deaf mutes have parents who were related before marriage. Direct inheritance of deaf mutism is rare. On the other hand, if both parents are deaf mutes from birth 36 per cent of their children will be deaf mutes. Sta-

thrills collected from the literature show that in cases of the acquired type of deaf mutism, 36 per cent were due to epidemic meningitis, 16 per cent to scarlet fever, 1 per cent to measles, 1 per cent to pneumonia, 1 per cent to syphilis, 4 per cent to trauma, 3 per cent to whooping cough, mumps, and typhoid fever, and 1 per cent to influenza and pneumonia. Congenital syphilis is judged to be the cause of from 5 to 8.6 per cent of the cases of the congenital type.

The functional examination of deaf mutism consists in testing the cochlear apparatus and the vestibular apparatus.

Hard classification of deaf mutism is as follows: Group 1 conversational voice heard at six feet; Group 2 raised voice heard close to ear; Group 3 vowel hearing; Group 4 loud noises heard, e.g., rattle, trumpet, whistle; and Group 5 total deafness.

Group 5 can be excluded at six months. Group 3 can be satisfactorily examined only after the second year of age and Groups 1 and 2 at the age of 4 to 5 years.

Alexander states that in cases of deaf-mutism in which the history is doubtful we may assume that the condition is congenital if the static labyrinth is extensible. W. B. STARR, M.D.

Jarvis, D. C. The Effect of Small Doses of Roentgen Ray in Certain Forms of Impaired Hearing. *Am J Roentgenol* 9 3, 30.

McCoy J. Treatment of Deafness by Small Doses of X-Rays. *Am J Roentgenol* 9 3, 2, 803.

Jarvis uses Wetherbee technique. In gap, 5 ma., 10-in. distance, and one-minute treatment time. In the method used by McCoy, that proposed by Stokes, the patient is seated 30 in. from the target and the rays are applied in turn to the regions of the right ear, the left ear, the occiput, and the open mouth in direction toward the pituitary gland. A 0-volt current is used with 4 in. spark gap and from 5 to 10 ma. The lateral exposure lasts from ten to thirty seconds, the posterior exposure from ten to twenty seconds, and the anterior exposure from five to fifteen seconds. The anterior exposure is opaque shield with a perforation 3 in. in diameter is held in front of the eyes. The treatments are given two or three times weekly for three to six weeks.

Jarvis states that cases with throat symptoms responded best to the use of the roentgen rays, the results being due probably to the action of the rays on the lymphoid tissue. Tinnitus also was markedly benefited.

McCoy reports the results in forty-five cases treated with the roentgen ray as follows: Otitis media catarrhalis chronica greatly improved, nine slightly improved, sixteen no improvement, seven.

Otitis media purulenta chronica greatly improved, none slightly improved, ten no improvement, none.

Otitis media purulenta residua greatly improved, one slightly improved, one no improvement, none.

Otosclerosis greatly improved, two slightly improved, two no improvement, two.

McCoy made the same observation as Jarvis relative to the relief of tinnitus.

With regard to the effect of the X ray McCoy believes there must be an absorption of small-cell infiltration in the eustachian tubes and possibly at the terminals of the auditory nerve, and perhaps also stimulation of the nerve. Whether or not there is penetration to the pituitary gland is unknown, but an alteration in this gland was suggested in 11 cases by change in the blood pressure.

O. M. RORTY, M.D.

Boyd, E. The Management of Discharging Ears in Children. *Canadian M Ass J* 923, xxi, 75.

The author draws attention to the danger to the hearing in cases of discharging ear and gives instruction for the proper handling of acute cases and the prevention of the chronic condition.

If an acute condition does not subside in from one to three weeks after proper incision of the drum, one of the following conditions should be sought and if found given proper treatment:

1. A poor general condition.

An inflammation in the nasopharynx associated with the presence of denoids, or chronic rhinitis with hypertrophied or chondroid tonsils.

3. Constant inflammation of the mastoid antrum and cells.

OTTO M. RORTY, M.D.

McCarthy, M. F. The Therapeutic Problems of Acute Middle Ear Infection. *Kentucky M J* 923, xxi, 14.

The author opens his discussion of the therapeutic problems of acute middle ear infection by stressing the importance of measures to prevent such infection.

Because of the influence of pathologic conditions in the nose and throat on ear infections, the first requisite in prophylaxis is to put the nose and throat in the best possible condition before infection develops. Foremost in this program comes removal of the tonsils and denoids.

After the nasal infection develops, no fluids or ointments should be introduced into the nose, and the patient must exercise care in blowing the nose.

After the acute symptoms of the nasal infection have subsided, the tenacious mucus in the nose may be partially dislodged by bland ointment or oily spray.

If middle ear infection develops in spite of these precautions, it is of great importance to recognize it at the earliest possible moment. This can be done only by routine examination of the ears during any of the acute general infectious diseases.

As soon as an ear infection has been discovered, and before the ear drum has bulged outward, the best therapeutic agent is heat applied by means of

irrigations every three to four hours, followed by the instillation of warm glycerine containing per cent phenol and the external application of heat.

During this time daily inspections should be made and the drum checked if there is any evidence of bulging or if the pain and fever increase.

Three conditions in which myringotomy may be delayed with safety are described as follows:

1. Tympanic membrane red but not showing a fluid line or bulging. Only moderate impairment of hearing.

2. Tympanic membrane red and showing fluid line evidently of serous character, hearing moderately diminished, drum only slightly bulging, low temperature, corac moderate pain.

3. Tympanic membrane covered or distorted with small serous blisters or hematomata, hearing moderately diminished, moderate pain, low temperature.

Myringotomy should be performed under general anesthesia except in the cases of adults who are not nervous and those of phlegmatic children.

Following myringotomy the ear should be irrigated with boiled water, boric solution or 1:8,000 or 1:10,000 bichloride of mercury solution, preferably the last. At least 1 qt. of solution should be used and given from a fountain syringe 3 ft. above the ear. The patient should be put to bed, the bowels moved daily, alkaline therapy given and the nose and throat treated. The mastoid should be examined frequently and the signs and symptoms of their complications should be borne in mind.

O. M. Rorty, M.D.

NOSE

Carter, W. W. The Value and Ultimate Fate of Bone and Cartilage Transplants in the Correction of Nasal Deformities. *Laryngoscope* 9:3, 1900.

Carter's experience has been confined to the transplantation of autogenous bone and cartilage in the human subject. He has not studied the microscopical changes occurring in these tissues.

After their implantation to any great extent but has kept some of his patients under observation for many years, and by making physical and X-ray examinations at intervals has found out what final clinical results may be expected and what happens to autogenous bone and cartilage when they are transplanted into the nose.

His clinical cases appear to show that bone is formed by the so-called peri-osteous osteogenic layer of the periosteum, the cells of which are protected and limited in their growth by the connective-tissue layer of the latter. This envelope is analogous to the limiting fibrous capsule which separates from surrounding structures all highly specialized tissue, such as the liver, kidneys, etc.

In none of his cases has there been an overgrowth of bone, the growth being here as elsewhere regulated by functional demands and the hereditary limits of growth for the area. If the transplanted tissue has

passive and performs no function, it is absorbed, even though it was well received by the host and originally established vascular connections.

In a case in which the tissue was killed by improper handling before it was introduced, there was almost complete disappearance of the transplant after the operation.

When it is necessary to build up the bridge of the nose to any extent, it is far better to introduce several thin pieces of bone than one piece of considerable bulk.

Bone and cartilage are used to replace their respective tissues. The implanted tissue usually consists of two-thirds bone and one-third cartilage and is obtained from the eighth or ninth rib at the costochondral junction.

In the author's opinion differences in results are to be explained by (1) the inclusion with the transplant of more or less of the peri-osteous osteogenic layer of the periosteum, (2) infection at the time of the operation, (3) injury to the transplant in handling or from heat, antiseptics, etc., and (4) differences in the tissue metabolism of the host.

CARL R. STEINKE, M.D.

J. Leon, G. B. Headache from the Standpoint of the Rhinologist. *Proc. Am. M. A.* 9:3, 1911.

In recent years practitioners have come to recognize the fact that intranasal and accessory sinus diseases are a frequent cause of severe headaches and neuralgias. According to Dintenfuss, 90 per cent of cases with headache not diagnosed and called nervous affections are of nasal origin, and according to Tilley, 6.8 per cent of the entire mass of population have accessory sinus disease.

Johnson calls to mind the fact that the trigeminal nerve is the great sensory nerve of the nose and face, the ophthalmic and superior maxillary divisions with the vidian nerve being the nerves of common sensation of the nose. As the nasal ganglion, the center of sensory nerve distribution to the nose, receives its sensory roots from the superior maxillary division of the trigeminal, its sympathetic branch joins the superior cervical sympathetic. The nasal ganglion situated in the sphenomaxillary fossa sends branches to the sphenoidal and ethmoidal cells, the orbit, periosteum, the mucosa of the nose, the roof of the mouth, the soft palate, the tonsils, and the nasopharynx, and is in close relationship to the sphenoid, the posterior ethmoid, and the maxillary sinus. When these cavities contain pus the ganglion is sometimes separated from them by only a thin wall of bone and diseased membrane.

The anterior part of the nasal cavity is supplied by the anterior ethmoidal branch of the ophthalmic division of the trigeminal. The study of nasal headaches resolves itself into a study of abnormal conditions of the nasal cavities and their adnexa which irritate the nerves supplying them. The irritants may be mechanical (pressure) or chemical (toxin from pus). One of the simplest nasal conditions

causing headache is pressure of the middle turbinate against the septum due to a septal spur or deviation of the septum. When there is congestion of the middle turbinate, a feeling of tightness in the nose and supra-orbital headache are produced. Congestion of the turbinate may be caused by coryza, dust, pollen or pus from the frontal sinus.

Sinusitis of the frontal sinus headache due to closure of the frontal sinus without suppuration, usually has its primary origin in hyperplasia of the structures near the infundibulum and hiatus semilunaris. The pain is less severe than that of frontal sinusitis. The symptoms resemble those of the eyes for close work, which is not relieved by treatment of the eyes and tenderness of the upper and inner part of the orbit. The site of the pain is the superior oblique. There is no pus in the nose, no blindness, and no change in the globe. The condition being in the nature of asthenopia. The treatment consists in opening the nasofrontal duct.

Pain in antral disease is due to the same causes as that of frontal sinusitis. The headache is frequently occipital, and usually there is tenderness over the canine fossa. The diagnosis is verified by the X-ray findings, the presence of pus in the nose, and exploratory puncture. Headache and pain from the sphenoid and posterior ethmoid are usually referred to the occiput, the deep temporal and the parietal regions of the side affected. Headache from anterior ethmoidal disease may be frontal or located between the eyes.

The treatment of all sinusitis with suppuration consists of drainage and ventilation.

The symptoms of Sluder's nasal ganglion neurosis are those of more or less severe coryza or post-ethmoidal sphenoidal empyema followed by pain beginning at the root of the nose and radiating to the upper jaw and the teeth, and extending back to the temple and about the zygoma to the ear but always most severe back of the ear, and from there extending to the occiput and neck, possibly to the shoulder, and in severe cases to the arm and hand. With this neuralgic syndrome there is sympathetic syndrome, the nature of hyperæsthetic limbs or hay fever. The application of cocaine to the mucosa over the nasal ganglion gives immediate temporary relief. Sluder's treatment consists in the application of 1 per cent silver nitrate solution over the ganglion. In obstinate cases he injects the ganglion with 1 cm of 5 per cent phenol and 95 per cent alcohol. He also treats the adjacent sinuses.

In hyperplastic sphenoiditis there may be multiplicity of pain symptoms because of the intimate association of many nerve trunks in the surrounding region. The symptoms resemble those produced by all of the other sinuses. The condition is characterized by thickened mucosa, localized inflammation with sometimes polyps and cysts. The treatment is drainage and ventilation.

Johnson concludes by mentioning the case of a girl 7 years old who had constant and severe pain over

the right frontal region which was found to be due to pinching of the supra-orbital nerve by two pieces of bone which had failed to unite to form the supra-orbital foramen. GUY L. BOWEN, M.D.

MOUTH

Brown, G. B. Infection and Inflammation of the Investing Tissues of the Teeth and Their Relation to the Maxillary Sinus. *Annals of the N.Y.S. Acad. Med.* 9:3 321, 40.

The author states that pyorrhea alba is beginning in gingivitis which may be due to a serous calculus deposited on the root of a tooth and low-grade infection. If the gingivitis which precedes it were more frequently treated in time many teeth could be saved from extraction.

In some cases there is as much as $\frac{1}{8}$ in. of bone between the teeth, palate and the antrum, others there is only a very thin shell like bony partition, and in others the processes extend well up into the antrum and when seen from within the antrum have a honeycomb appearance.

Infections of the tissues around the apex may travel to the antrum by direct extension by necrosis of the bone and by the lymph and the blood streams.

Cases of infection of the antrum of Highmore resulting from the extraction of teeth may be divided into three groups: (1) those in which the dental roots lay within the antrum and on extraction left a fistula through which the infection entered from the mouth; (2) those in which the root extended to, but not through, the periosteum and mucosa of the antrum, the soft tissues became infected after extraction and a probe inserted for diagnostic purposes accidentally penetrated the cavity of the antrum; and (3) those in which the wall and lining of the antrum were penetrated by the extraction of the tooth.

Infection does not occur in all cases of perforated antrum, but when food is forced through an open fistula it is practically certain to develop. This condition will tend to keep the sinuses open and retard healing. When drains are inserted, permanent fistula usually results as the edges of the sinuses become lined with epithelial tissue.

A fistula following extraction should be closed as soon as possible. If the antrum is infected, opening should be made through the nose to promote drainage. JAMES C. BRANFORD, M.D.

Berry J. Clayton-Green W. H. Finch, A. E. H. and Others. Various Methods of Treating Cancer of the Tongue. *Lancet* 9:3 437, 438.

The methods of treating cancer of the tongue were the subject of discussion at the meeting of the Medical Society of London.

After emphasizing the importance of early treatment of tongue lesions and the extension of all doubtful ulcers, etc. for microscopic examination, Berry stated his belief that in advanced cases an external or submaxillary operation offers the best chance for

relief Berry does not approve of procedures which split the cheek or jaw. In discussing the nature of the disease he stated that it is essentially local one with very little tendency to form distant metastases, but affects the cervical lymphatic glands early. Early free removal of the primary growth with removal *en bloc* of the nearest lymphatic glands offers hope of permanent cure but if the growth originated in the posterior part of the tongue, the deeper cervical glands (especially the post pharyngeal glands) which are soon involved, cannot be removed *en bloc* and therefore permanent cure cannot be expected. Berry doubts whether the so called block dissection, with removal of the jugular vein and sternomastoid, was ever worth doing. It is seldom necessary for cases in which the growth is situated on the anterior part of the tongue, and he believes it is generally useless for advanced cases in which the growth is situated posteriorly. Moreover he believes it probable that unsuccessful attempts to dissect out affected glands merely fix or spread of the disease. The class of cases which he has dealt with has been mainly cases of cancer of the middle and posterior thirds of the tongue.

For diathermy Clayton Green claimed these advantages: (1) It is possible by this means alone to destroy the tongue as far back as the epiglottis by an operation through the mouth, and (2) there is no danger of the implantation of cancer cells in the operation wound. A disadvantage is that the procedure causes a septic slough. The slough becomes septic, however only after an interval during which the lymphatics become sealed off. Clayton Green had only one serious case of sepsis among sixty in which diathermy was applied within the month.

Pinch described his experiences in the treatment of cancer of the tongue at the Radium Institute. Of about 600 such cases about 350 were inoperable when first seen, and 300 could be described only as appalling. While the use of radium was beneficial it cannot be claimed to have effected a single cure at the Radium Institute. However Pinch stated that he knew of one case apparently cured by radium that a physician who refused operation for small growth on the tip of the tongue which had been confidently diagnosed as carcinomatous by two surgeons. The patient treated himself by applying the growth small tube containing 0.5 mgm of radium for one hour daily for three months. Pinch usually practices in the use of radium to bury several times in the growth for several hours. On the rare occasions in which he has seen operable cases he has invariably passed them on to a surgeon. In his opinion, there is very little difference between the results of excision by the knife and those obtained by diathermy.

Gordon Taylor stated that he has been driven by his results to perform more and more radical operations for cancer of the tongue. He now performs a bilateral block dissection followed at a later period by the removal of the tongue by diathermy. This

operation, which he had been practising for only a few years, has already given better results than the more limited operations he performed previously for the patients he operated on before 1914 all but one had a recurrence within twelve months, whereas several of those subjected to the more extensive operation have survived for three years. Gordon Taylor does not hesitate to remove portions of the jaw if it is involved. Not infrequently the operation results temporarily in considerable oedema of the face.

Clogg pointed out that recurrence after operation for cancer of the tongue only rarely develops in the mouth. He therefore gauged block dissection a trial, but had no improvement in his results as recurrence took place in the neck under the upper part of the sternomastoid muscle in the region of the apex of the mastoid process and the posterior belly of the digastric. He now makes a special attack upon this area by dividing the sternomastoid close to its upper attachment, but stated that as yet he is unable to claim any improvement in results from this procedure. He regards the outlook as hopeless and the case as inoperable if the glands are adherent to the muscles or fascia or if they are cystic.

CARL R. STEINER, M.D.

THROAT

Moore, R. S. Report of Case of Safety Pin in the Trachea. *Laryngoscope* 9 3, 1900.

The author reports the case of a patient with persistent hoarseness, chronic pharyngitis, and frequent attacks of sore throat. Laryngoscopic examination revealed a white body just below the cricoid cartilage. X-ray examination showed an open safety pin in the trachea close to the larynx. Removal was followed by entire relief of the hoarseness.

NECK

Harries, D. J. The Influence of Intestinal Bacteria upon the Thyroid Gland. *Brit. M. J.* 9 3, 4553.

As the basis for this article Harries accepts the following theories:

Exophthalmic goiter is due to the excessive production of thyroxine.

Diffuse parenchymatous goiter is an attempt to produce a sufficient amount of thyroxine for the needs of the body through compensatory hypertrophy of the gland.

In myxedema there is failure of the gland to produce the necessary amount of thyroxine.

It has recently been shown by Kendall that thyroxine, the active principle of the thyroid gland, is a triiodo trihydro derivative of tryptophane. Kendall investigated the factors controlling the supply in the diseases mentioned.

Theoretically one should find that in exophthalmic goiter the gland is well supplied with tryptophane, that in parenchymatous goiter the supply is inadequate, and that in myxedema the supply is

ery inadequate or the gland is unable to utilize the supply available.

With regard to the influence of intestinal bacteria the author believes that a coliform type of bacilli, an indole producer, may obtain predominance in the intestine and exert a definite influence on the rate of growth of various other bacteria. He therefore draws the following conclusion:

1. Exophthalmic goiter is due to the excessive absorption of tryptophane from the intestine, and this in turn is traceable to the absence of the indole producers from the intestine.

2. The absence of indoles from the urine indicates the absence of indole producers from the intestine.

3. Exophthalmic goiter is characterized by the absence of indoles from the urine, a wolf-like prognathic sign.

4. Operative surgery has a definite place in the treatment of exophthalmic goiter. Medical treatment much can be done by suitable dietetic measures.

5. Diffuse parenchymatous goiter is characterized by an excess of indoles in the urine suggesting excessive destruction of tryptophane. If this excess is followed by a diminution or complete disappearance of indoles, it suggests that the case is passing the exophthalmic form.

6. Myxedema is due to a trophic changes in the thyroid gland which lowers the power for dealing with the circulating tryptophane, whether that balance is normal, deficient or normal amount. The disease is thus compatible with the presence or absence of urinary indoles.

MORIS H. KERRY, M.D.

Bleicher, F. Iodine Therapy of Endemic Goiter and Its History. *Die Jodtherapie des endemischen Kropfes und ihre Geschichte*. Jena, 1911, 1912, and *Rechnung*, 9, 12, 13.

The author gives the history of the use of iodine for goiter and especially emphasizes its dangerous effect, described as iodism, thyrotoxicosis, and iodine Basedow disease which finally led to the arguments of Kocher and Krehl against the use of iodine. He then sums up the cases of such injury observed by him. In these there was one death. His conclusion is that the old Chaslin theory that deficiency of iodine is the sole cause of goiter is incorrect. (Z.)

Kerr, W. J. and Rusk, G. Y. Acute Yellow Atrophy Associated with Hyperthyroidism. *Medicine*, 1911, 9, 445.

A certain degree of jaundice is occasionally observed in the terminal stages of thyrotoxicosis. The mechanism of its production has not been explained. It seems improbable that the condition has any relation to cardiac decompensation and consequent portal congestion, and there is no evidence to indicate that it is due to blood destruction. Proof that the liver is affected because of extensive destruction analogous to that yellow atrophy has

not been recorded in clinical cases so far as the literature is concerned. The etiology of acute yellow atrophy of the liver is obscure and there has been much discussion as to whether it should be considered a pathologic entity.

The authors report a case of severe hyperthyroidism in a man 30 years of age. Acute symptoms had been present for three months before his admission to the hospital. All the usual symptoms excepting exophthalmos were present and the basal metabolic rate was 75 per cent above normal. Radium was inserted into the gland.

After three months of treatment in the hospital and at home during which time there was some improvement, a bilateral partial lobectomy was done under general anesthesia. Postoperative conditions were satisfactory. Then nausea and vomiting occurred and rapidly increasing jaundice appeared. The temperature remained low and the pulse became rapid. The urine contained bile. On the third day after the development of these symptoms the patient became semicomatose and died after an attack of dyspnea, cyanosis, and rapidly failing pulse.

Autopsy twelve hours after death showed hyperplastic goiter which had been treated by partial thyroidectomy, a surgical lesion well healed, diffuse cardiac hypertrophy, hypertrophy of the thymus, acute yellow atrophy of the liver, and generalized icterus, cut hyperemic splenic tumor, parenchymatous degeneration of the kidney, and emaciation.

The authors refer to the work of H. Chaslin who made histologic study of the liver in experimental hyperthyroidism in albino rats. Following toxic doses of thyoidin H. Chaslin discovered in the parenchymatous degeneration of the liver in 50 per cent of the rats killed in the early stages and in 75 per cent of those found dead at later periods.

S. H. J. FETTER, M.D.

Friederich and Hitzler. Recurrent Goiter (Reber-Kropfrezidiv). *Beitr. Klin. u. chir. Gyn.*, 1910, 5, 105.

The authors designate cases of recurrence those in which the enlargement reappears on the side operated upon. Among 795 cases subsequently examined there were 3 true recurrences and 24 false recurrences (an increase in the lobe left intact). In comparison of the reports of different authors it will be found that the number of recurrences varies widely. This is due to the different circumstances and views of the compilers. The number of cases, the method of operation and the time of the subsequent examination (Brunner observed recurrence after thirty years) are too of importance.

Ligation of the arteries alone is not sufficient. Hemistruumectomy is arranged only when it is not desirable to remove the entire mass at one time. Punctate is too unsatisfactory. At the clinic at Heidelberg there are seventeen recurrences in

thirty-one cases. The value of resection by the Mikulicz technique is variously reported, while Reinbach and Katsch saw scarcely any recurrences. Kocher and Roux believed the prospects of permanent cure following this procedure were slight. The enucleation introduced by Kocher gives a much better prognosis, but in the Heidelberg clinic there were 163 recurrences in 263 cases. Ligation of the arteries with the operations named appears to offer more favorable prospects.

The authors believe that the factor of chief importance is not so much the method of operation as the type and structure of the goiter. The parenchymatous goiter has the highest rate of true recurrence (70 per cent). To prevent recurrence, removal of another distinct or cautious iodine prophylaxis is recommended. VON SIEBOLD (Z)

Delennoy, E., and Dhalluin, A. Metastatic, So-Called Benign Goiters. Latent Thyroid Carcinoma Producing Metastases (Les goitres bénignes dits métastatiques cancer thyroïdien latent à métastases). *Arch. franc. belge de chir.* 9, xxv, 947.

This article is based on seventy-one cases, one of which came under the authors' observation. The authors conclude that the metastatic so-called benign tumors of the thyroid are really malignant growths because clinically they produce metastases and have a fatal evolution. Histologically the evidence is entirely in favor of malignancy. The contribution adds one case to controversy existing since 1875. LOYAL E. D. VES, M.D.

Brunin and Vandepuit. Regional Anesthesia of the Neck and Upper Extremity. A Critical and Complete Review of Methods (Les anesthésies régionales du cou et du membre supérieur). *Arch. franc. belge de chir.* 9, xxv, 958.

Following an exhaustive review of the methods of inducing anesthesia of the neck and upper extremity, the authors state that in their opinion, injection of the brachial plexus at a point above the clavicle is preferable to para-vertebral, axillary, subclavicular injections. The article includes several tables giving the innervation of the skin and muscles of the regions under discussion.

LOYAL E. D. VES, M.D.

Tyler H. M. A Case Report of a Cyst of the Epiglottis Presenting Some Unusual Features. *York M. J. & Med. Rev.* 9, 3, CIVIL, 337.

A review of forty-two cases of cyst of the epiglottis demonstrated that age has little influence on the occurrence of the condition, as the youngest subject was a newborn infant, and the oldest, 63 years of age. The growths were found twice as frequently in males as in females, however, and six times more frequently on the lingual surface of the epiglottis than on the laryngeal surface.

In Tyler's case the cyst was excised to its base and the point of attachment was cauterized. The

symptoms had resembled those of an atypical epiglottitis combined with those of laryngeal stridor. Seven weeks after a secondary minor operation for the primary trouble the patient was cured.

E. C. ROBERTSON, M.D.

McKenty J. E. The Operation of Total Laryngectomy for the Cure of Intrinsic Cancer of the Larynx. *A. Otol. Rhinol. & Laryngol.* 9, xxx.

From a large experience in the surgical treatment of carcinoma of the larynx, McKenty concludes that in practically all cases radical operation offers the only hope of cure. He is very optimistic, however, regarding the results of this procedure for in a series of thirty-three cases operated on since 1916 he has obtained an apparent cure in 66 per cent. Surgical procedures less radical than radical laryngectomy which were used previously gave poor results, the great majority of the persons subjected to them dying of recurrence. The factors favoring an optimistic outlook with regard to intrinsic cancer of the larynx are:

1. The slowness of its growth.

2. Freedom of the posterior part of the larynx from involvement.

3. Superficial growth. Cancers beginning in the deeper layers of the larynx may not be more malignant, but often escape detection until they are well developed.

4. Extension forward and downward rather than upward and backward.

5. The age of the patient. Cancers in the late thirties or early forties are more malignant than those developing in later life.

Arytenoid involvement places the disease on the borderline of the extrinsic class and tremendously lessens the hope of cure. Biopsy for diagnosis is contra-indicated. The diagnosis should be made on the history, appearance and behavior of the growth and on the exclusion of syphilis and tuberculosis. The loss of motility in the affected cord is almost pathognomonic of cancer. This is due to fixation of the muscular ture by infiltration. The disease attacks one of the cords, usually in its middle third. There is no primary involvement of the interarytenoid space, which is characteristic of tuberculosis. The Lents are lamps of great aid in obtaining a clear outline of the diseased area. The extent of the growth cannot be determined from its appearance as only the upper margin is seen on inspection, the extension being downward and inward. McKenty believes that it is a good rule to add two-thirds to the visible growth in drawing conclusions as to its size.

Only the most incipient cancers should be treated by any method other than the most radical, and even in these cases better results are obtained by radical operation. The larynx should not be opened for inspection of the growth as in this procedure there is great danger of inducing the growth and thereby spreading the disease. The extrinsic cancer

are inoperable. The author warns against thyrotomy as it is not sufficiently radical to extirpate the disease, the only exceptions being cases of cancer which is just beginning. Total laryngectomy is the operation of choice. In thirty-one cases subjected to this operation there was no surgical mortality. In twenty-nine one-stage operations were done, and in two, the two-stage operation. Two other inoperable cases were subjected to thyrotomy. Twenty-five patients have entirely discarded the tracheal cannula, which is rarely possible when the two-stage operation is performed. One of the purposes of the one-stage operation is to secure tracheal and skin union with a tracheal ring immediately beneath. This gives rigid opening, dispenses with the cannula, and adds greatly to the patient's comfort. In practically all of these cases an audible whispered voice is developed. Sixty-six per cent of this series of patients are free from recurrence three to five years after operation.

The surgical principles of the operation are: (1) anesthesia, (2) the prevention of the inhalation of blood, (3) cleansing and disinfection of the nose, mouth, and pharynx, (4) the secure anchoring of the tracheal stump to the skin, (5) proper drainage, (6) closure of the wound, (7) exclusion of the wound from tracheal secretions, and (8) the proper planning and securing of the feeding tube.

The operation is performed under a combination of local and general anesthesia. The T incision is used and the dissection carried back and forth until the larynx and trachea are isolated. After ligation of the vessels, the induction of general anesthesia is begun, the operation at this stage having been performed under anesthesia induced with 1 per cent novocaine. The trachea is now cut across just below the cricoid cartilage, the greatest care being taken to prevent the entrance of blood into the lumen. Before division of the trachea

few drops of 1 per cent cocaine solution are injected into it between the rings to prevent coughing. The larynx is lifted forward and the posterior wall of the trachea is incised down to the oesophagus. All a rubber tube which snugly fits the tracheal lumen is then inserted into the trachea for about 1 in. This acts as a tracheal extension, turns back the blood, and enables the anesthetist to continue the anesthesia without being in the way. The larynx is separated from the oesophagus from below upward and is pushed behind the arytenoids. It is then allowed to fall back into position and the thyrohyoid membrane is divided, an opening being made into the hypopharynx just below the attachment of the epiglottis. Before this opening is made the anesthetist opens the patient's mouth wide, removes all secretions, and paints the entire cavity of the pharynx, hypopharynx, and nasal cavity with 1 per cent solution of mercurchrome. The edges of the opening through the thyrohyoid membrane are

grasped and held apart. A yard of gauze folded 2 in. wide is then packed into the hypopharynx and crowded upward until it fills the mouth and pharynx.

At this point careful inspection is made of the growth. If it is found to be entirely intracapsular, the larynx is removed by cutting as close as possible to the superior border of the thyroid cartilage. The opening thus made in the hypopharynx is small and can be easily repaired. If the disease has approached the top of the larynx or has involved the arytenoid, more tissue is removed, even to the removal of the anterior oesophageal wall adherent to the posterior surface of the larynx. Just before the last stitch is tied in the closure of the hypopharynx the anesthetist removes the gauze packing from the mouth and again cleanses the pharynx and paints it with 1 per cent mercurchrome solution. A feeding tube which will pass through the nose without undue pressure is passed, and when its point appears in the oesophagus beneath the untied stitch it is directed into the oesophagus for about 6 in. The point of exit from the nose is carefully marked and the tube fastened to the face with adhesive plaster. The last stitch is then tied. If the redundancy of the tissue allows it, a second layer of sutures is placed over the first in the hypopharyngeal closure. A plain catgut is used.

The trachea is anchored to the skin of the neck by two or three stay sutures passed around rings, brought out about 1 in. from the edge of the wound, and tied on small perforated lead discs. In this manner the tracheal stump is steadied in the wound and the strain upon the sutures which are to unite the skin edges with the mucous membrane of the trachea is relieved. To make the union more exact the fat along the skin edges on both sides is cut

away. The skin strip and the edge of the trachea are united with interrupted silk sutures. The wound is closed loosely, no effort being made to bring the deeper structures into anatomical order. It is essential to obtain primary union at but one point, viz., where the lines of the T incision cross. A tube and gauze drain are passed into the wound, the ends of the T just above the point where the trachea is secured to the skin to small gauze drains are placed, one on each side. A large tracheal cannula wound with gauze impregnated with bismuth paste is fitted tightly into the trachea to prevent wound contamination. Without this tracheal plug, long infection would be almost inevitable.

The after-treatment consists in the prevention and treatment of wound infection and the prevention of other complications such as pneumonia, mediastinitis, etc.

This operation has given brilliant results, whereas the less radical measures have recurrence and death as their usual sequel. BEN N. WADE, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Eggers, G. Radical Operation for Chronic Empyema. *A Surg.* 9:3, LXV, 127

In this article Eggers deals with the treatment of deep sinuses and cavities which have resisted conservative measures. The reasons for the failure of the less radical treatment to effect cure are usually found in such mechanical conditions of the thorax as a rigid thoracic wall, a collapsed lung, a firm unyielding pleura, pockets and recesses connected with the empyema cavity which are inaccessible to treatment, bronchial communications, and tuberculosis. The operative procedures necessary to bring about complete cure in these cases consist of more than simple drainage and irrigation. The term radical operation is here used to indicate an attempt at the radical removal of the causes of non-healing rather than an attempt to produce complete collapse of the chest wall.

This report is based upon 46 cases gathered from army and civilian practice. Most of them had drained from six months to two years, the longest to five years. The decision to operate was based, not alone on the length of time drainage had continued, but also upon the local condition found. These cases must be thoroughly studied and the operative procedure carefully planned according to the indications. The patient's general condition must also be considered. If he is anemic and undernourished radical operation must be delayed as it is apt to be associated with considerable shock. Prior to operation all patients who had not been so treated were put on intensive Carrel-Dakin treatment, with the establishment of good drainage. The severity of the infection was determined by frequent cultures of the secretions. By this treatment healing was obtained or a clean field was produced for the more radical measures. Except when definitely contraindicated, all cases were operated upon under general ether anesthesia. Differential pressure pneumothorax was unnecessary.

There were several main groups of cases:

Cases with an empyema cavity communicating with the exterior by a narrow sinus. This group comprised twenty cases. Many of these were cases in which drainage had been established too low. The entire fistulous tract with its surrounding skin, new formed bone and thickened pleura, was excised in one piece. The skin and muscles were partially closed and Carrel-Dakin treatment begun at once. In this group there were no deaths. In several cases healing had occurred by the end of four weeks, but in one the condition persisted for three months. All but four patients, whom Eggers was unable to trace, are known to have been cured.

3 Cases with intractable deep sinuses.

3 Cases with a rigid chronic empyema cavity with infected walls.

4 Cases with an empyema cavity having communicating pockets or recesses.

The treatment of these three groups is considered under one heading, as the underlying principle is the same. Healing has failed to occur either because of rigidity of the walls, infection of the walls leading to reinfection of the cavity or narrow recesses harboring infection which communicate with the cavity and have caused recurrence. To meet these conditions it is necessary to mobilize the chest wall, mobilize the lung completely, remove all infected tissue lining the cavity and explore carefully in order to remove all hidden recesses. The operation is planned and carried out with this object in view. Careful hemostasis is very important, as the best there is considerable loss of blood, and the operation is associated with considerable shock. The wound is closed with one or two short drainage tubes in the dependent part.

Immediately after the operation the patient is given a hot coffee enema containing 1/4 os of whiskey and 1 gr of strychnine. Hypodermoclysis, if required, should be given under the skin of the thigh, so as not to embarrass respiration. Morphine is given freely during the first few days. There is usually considerable serous or sero sanguineous discharge during the first few days, but this quickly subsides if the wound remains sterile. Further treatment depends upon the course. If the discharge remains sterile, the drainage tubes are removed in a few days. If organisms are present in the discharge or it is turbid, irrigations with Dakin solution are given once a day. This should not be begun until after the first week. If pus develops, as is not uncommon in cases in which an incomplete decortication was done, regular Carrel-Dakin treatment is instituted. All patients are encouraged to sit up early, to breathe deeply and to get out of bed in from three to seven days.

Ninety-nine cases belonging to these three groups were treated. In some instances it was necessary to perform the operation in several steps. Of these ninety-nine cases, healing occurred in forty-one in from four to eight weeks. A few required reoperation. Of the total number of patients, sixty-seven are known to be healed, twelve are known not to be healed, and one is dead. Although it was impossible to get in touch with nineteen, it is assumed that the majority are healed, as notes made at the time of operation or soon after indicated that conditions for healing were favorable.

5 Cases with a chronic open pneumothorax. In chronic pneumothorax the entire lung on one side

has collapsed because of too early operation before adhesions had formed or as the result of perforation of lung abscess and the production of pyo-pneumothorax. If the condition is recognized early, the use of the blow-bottle, deep breathing and exercises may correct it unless there is large bronchial communication. Later however fibrous changes occur in the lung parenchyma and radical operation is necessary.

Because of the changes in the lung itself the aim of the operation is primarily mobilization or collapse of the chest wall, and secondarily mobilization of the lung. The general principles described in the treatment of chronic empyema are followed. Portions of from four to eight ribs are resected sufficiently to allow the chest wall to fall in. The thickened parietal pleura is removed. If the patient's condition permits decortication of the lung may be attempted. This is frequently very difficult. If decortication is not possible, the lung should be freed completely around its margin, the treatment used in chronic empyema then being instituted. In most cases in which the condition is recognized early simple drainage and exercises will effect cure. If the condition is not recognized early and properly treated, it constitutes a very serious problem because of the fibrous changes within the lung. Fifteen patients with this type of condition were treated; seven were healed, four are known not to have healed, three died, and one was not heard from.

6 Cases of bronchial or pulmonary communication. These are divided into cases of broncho-pleural and broncho-cutaneous fistula. The former usually heal spontaneously but the latter require surgical intervention. The operative procedures employed for the associated chronic empyema seem sufficient for this condition. Of seven broncho-cutaneous fistulae encountered in the author's cases six healed and one was fatal.

7 Cases with tuberculosis. The presence of tuberculosis in a patient with chronic empyema is often difficult to prove. In the series of cases reviewed there were eleven in which positive evidence of tuberculosis was obtained after radical operation. Of these eleven patients three are healed, one healed and died one year later, one is not healed, three did not heal and died later and three have not been heard from. Because the condition is not recognized before operation, these cases are included in the group of ninety-nine chronic cases already discussed.

There are also six patients in whom the presence of tuberculosis was known prior to operation. Three of these healed and were apparently cured of the intrapulmonary lesion. One is at present under treatment, one is in government sanatorium, and one has not been heard from.

In this series of 146 cases of chronic empyema subjected to radical operation the operative mortality was 3.4 per cent.

McMICHAEL HANCRAFT, M.D.

Du Bray E. S. Sudden Death Following Thoracostomy. *Am J M Sc* 923 div 357

I reviewing the literature Du Bray found that cases of sudden death following thoracostomy may be divided into three classes according to their etiology.

1 Syncope and collapse following mechanical or chemical irritation of the pleura. This is the so called pleural reflex.

Syncope and collapse following injury and congestion of the lung parenchyma. With this is associated a number of conditions such as air embolism, pulmonary edema, and pulmonary hemorrhage with or without hemoptysis. In most instances several of these factors combined account for the collapse.

3 Spontaneous pneumothorax. This has always been regarded as the cause of untoward symptoms and death following thoracostomy in certain small number of cases, but in the light of our more recent acquired knowledge these results may be better explained on the basis of the pleural reflex or pulmonary injury and congestion.

Du Bray reports a case of his own. Several days after the removal of a tuberculous kidney on the right side findings suggesting a pleural effusion in the right chest were noted. An exploratory trocar was introduced in the seventh right interspace in the posterior axillary line. As fluid was not found at the first puncture, the trocar was partially withdrawn and thrust forward in other directions. During this procedure the patient became cyanotic, and soon fell unconscious.

After the exploration the condition became steadily worse in spite of all efforts to relieve it, and the patient died at the end of twelve hours.

The chief findings of the postmortem examination which had bearing upon the immediate cause of death were as follows:

Very dense fibrous adhesions in both pleural cavities, both cavities being practically obliterated. There was no fluid in either pleural cavity. Both lungs were markedly edematous. The middle lobe on the right side was the site of extensive hemorrhage. This area extended down to one of the large branches of the pulmonary vein but actual rupture of the vein was not demonstrated. In the center of the hemorrhagic area a puncture wound. A clot was to be found in the neighboring bronchus. The larger branches of the bronchus in both lungs contained considerable amount of frothy fluid.

Du Bray concludes that the puncture in the middle lobe of the right lung, which was surrounded by hemorrhage and congestion, and the associated presence of extensive pulmonary edema justify the supposition that this accident was caused by the combined physiologic pathologic mechanism discussed in the second group. There was nothing in the clinical picture or the autopsy findings to suggest that air embolism was a factor.

McMICHAEL HANCRAFT, M.D.

a stage time of nine weeks. I eleven, a secondary abscess required drainage.

The authors conclude that the successful treatment of acute empyema is based upon measures providing adequate drainage.

DEAN W. CHURCH, M.D.

Perkins, J. J. and Burrell, L. S. T. Artificial Pneumothorax: Its Application to Cases Other Than Those of Pulmonary Tuberculosis. *Lancet*, 9.3.33, 473.

The authors review twenty-one cases. Only two cases of series treated by artificial pneumothorax are omitted. These are both cases of bronchiectasis in which the method was tried but found impossible because of the presence of extensive adhesions. The series reviewed included seven cases of abscess of the lung, six of bronchiectasis, three of recurrent profuse hemoptyses, two of chronic pleural effusion, and three of effusion complicating new growths. The three cases of recurrent hemoptyses and the two of chronic effusion may possibly have originated in tuberculosis, but as no tubercle bacilli were found they were treated for the immediate condition.

In six of the seven cases of lung abscess the results were very satisfactory. Two of these the abscess ruptured into the pleural cavity following pneumothorax, and surgical drainage was necessary. In another of the six there were adhesions requiring thoracoplasty. In the seventh case there was improvement but operation was necessary on account of adhesions; this patient died the day after operation.

In four of the six cases of bronchiectasis there was improvement. The two patients who were not benefited or operated upon and died. In two additional cases pneumothorax was prevented by adhesions. In two of three cases of hemoptyses of unknown origin the treatment was successful, and in one without benefit. The two cases of chronic pleural effusion were cured. Pleural effusion complicating new growths was not helped by pneumothorax.

It will be seen from these cases that artificial pneumothorax may be of value in cases of the lung bronchiectasis, hemoptysis of unknown origin, and recurrent pleural effusion. In cases of lung abscess without adhesions it is sufficient to effect cure and will render more severe operation unnecessary. Because of the difficulty of discovering the abscess cavity it is certainly to be preferred to drainage. When the abscess is superficial the presence of adhesions may lead under pneumothorax to intrapleural rupture necessitating drainage of the pleura. If the adhesions are widespread they may prevent complete collapse and necessitate thoracoplasty. Nevertheless the authors advocate artificial pneumothorax as routine procedure on the ground that it may be efficacious in itself and, if not, that it relieves the symptoms and improves the general condition, thus making it possible for the patient to withstand the more severe operation.

In bronchiectasis also successful results depend on the absence of adhesions. In the cases of recurrent hemoptyses and chronic effusion the good results are striking. Roscoe C. Wana, M.D.

Riviera, C., and Remondet, W. H. C. Surgery in the Treatment of Pulmonary Tuberculosis. *Lancet* 9.3.33, 53.

It was predicted over one hundred years ago that the treatment of pulmonary tuberculosis would begin to meet with definite success only when a method was devised by which the diseased area could be rendered quiescent.

Of the measures of obtaining this immobile state artificial pneumothorax should first be attempted. Adherent pleura is one of the chief obstacles to collapse of the lung. Adhesive bands may connect the two layers of pleura or the two layers may be more or less completely fused. If adhesive bands prevent complete lung collapse they may be separated by the electrocautery through the thoracoscope, divided with tenotomy or separated by open operation. The last procedure conducted under gas and oxygen anesthesia has the advantage that the bleeding from cut ends of the adhesions can be better controlled. The adhesions should be cut as near the ribs as possible to avoid contact with infected lung tissue.

When the pleura is too densely adherent to permit pneumothorax, pneumolysis may be attempted. This consists of separating the principal pleura from the deep fascia and ribs, allowing the lung to collapse inside the chest wall. The space is then filled with solid medium (paraffin wax or adipose tissue) or with gas (air or nitrogen).

Operations designed to replace pneumothorax are more serious than the latter for three reasons: (1) they hinder recovery; (2) the lung collapse is incomplete, occasioning more mechanical and toxic disturbance; and (3) the collapse is not remediable at the end of treatment or in case trouble threatens the other lung. To guard against the last danger a most careful examination of the condition of the better lung is imperative.

According to Brauer, thoracoplasty achieves not more than three quarters the collapse obtained by artificial pneumothorax.

In comparison with thoracoplasty pneumolysis with paraffin packing causes less shock, mutilation, and deformity and can be performed more quickly but paraffin may be extruded. However, separation of the serous fund, obviating this complication, must be avoided.

Thoracoplasty is best performed under gas and oxygen anesthesia. Section of the phrenic nerve in the neck has been done in some cases and in diminishing lung expansion by paralyzing the diaphragm, and has lessened the necessity of removing so much of the lower ribs.

The conclusions drawn by the authors with regard to the surgical treatment of tuberculosis are as follows:

1. Persons with tuberculosis tolerate chest operations under gas and oxygen better than is generally supposed.

2. Extrapleural operations are preferable to the intrapleural division of adhesions.

3. Pneumolysis is the simplest and shortest of extrapleural operations, and has the advantage of effecting localized collapse.

4. Pneumolysis is associated with some danger of sepsis, and the paraffin is apt to be extruded.

5. Paraffin does not immobilize as effectively as extensive rib resection.

6. Well devised thoracoplasty after careful inspection of the better lung gives a condition favorable for the arrest of pulmonary tuberculosis.

V. E. DEW, M.D.

Sauerbruch, F. The Surgical Treatment of Tuberculosis of the Lung. (Die chirurgische Behandlung der Lungentuberkulose.) *Monatsschrift für Chirurgie* 9, 1921, 965.

The thor gives short historical review of the surgical treatment of tuberculosis. Great advancement is made following the introduction of artificial pneumothorax by Forlanini. Forlanini had noticed that recovery occasionally occurred after large pleural exudate or spontaneous pneumothorax; the immobility of the affected lung permitting healing. In the presence of adhesions extrapleural thoracoplasty may be necessary. This operation is usually carried out under local anesthesia. The resection of the ribs from the level of the first to one sitting is very dangerous and should be attempted only by a very experienced operator and then only in the presence of fairly rigid mediastinum. In several stage operation the lower ribs should be removed first in order to prevent aspiration into the lower functioning lung.

Sauerbruch's experience now includes 507 cases. The operative mortality ranged from 1.4 per cent. The per cent mortality in the first few weeks, however, must also be attributed to the operation. A cure was obtained in 33 per cent of the cases. In some of these six years or more have elapsed since the treatment. In 7 per cent of the cases the condition was improved.

Extrapleural compression and phrenicotomy are to be considered as component of extrapleural thoracoplasty.

Approximately 5 per cent of all cases of lung tuberculosis are operable. B. CHASE (7)

ESOPHAOGUS AND MEDIASTINUM

GILL, G. A Wire Ring in the Esophagus. *Laryngoscope* 31, 9, 1921, 1.

A infant 7 months old suffered from choking spell after nursing. X-ray examination showed a metallic ring in the esophagus, just below the border opposite the sternoclavicular joint. The ring was successfully removed through a small laryngoscope without the use of an anesthetic.

Labey, F. H. Esophageal Diverticula. *Boston Medical and Surgical Journal* 93, 1921, 335.

Diverticula of the esophagus have been classified by Bensaude, Gregoire and Guenault into esophageal and pharyngo-esophageal. True diverticula of the esophagus, the traction diverticula of Rohitanky may be epiphrenic or epibronchial. In this paper the author deals with pharyngo-esophageal diverticula, the pouch diverticula of Zenker.

Pharyngo-esophageal diverticula are always single and located on the posterior or the posterolateral wall of the pharynx just below its junction with the esophagus. They project from between the fibers of the oblique and transverse bundles of the crico-pharyngeus muscle, a division of the inferior constrictor of the pharynx. The pouch occupies the prevertebral space behind and usually to the left of the esophagus, between the layers of the prevertebral and pretracheal fascia.

The etiology of these diverticula has been a mooted question, but the latest investigations favor Kulenkampff's theory that they are analogous to inguinal hernia in that there is congenital muscular hiatus covered over by elastic tissue. This elastic tissue relaxes with age, and herniation of the mucosa results from increased intrapharyngeal pressure. The increased intrapharyngeal pressure is attributed to a defect in the neuromuscular mechanism whereby the spasmodically contracted fibers of the inferior constrictor muscle fail to open in coordination with the propulsive action of the pharynx.

Pharyngo-esophageal diverticula manifest themselves in middle or advanced age. They occur four times as frequently in men as in women. The symptoms have been divided by Starck into the prodromal, the direct, and the indirect. The prodromal symptoms, which may be present for years, include the expectoration of mucus, dryness of the throat or salivator, coughing and choking, cautious deglutition, and at times feeling suggesting the presence of a foreign body in the throat. Direct symptoms develop when the sac has attained sufficient size to obstruct the esophagus by pressure or to close the esophageal opening by traction. Gradually increasing dysphagia then develops, food catches in the throat, and finally liquids cannot be swallowed. Regurgitation always occurs but may be delayed for hours after the taking of food. Indirect symptoms result from the pressure of the distended sac against the diaphragm, bronchus, and aorta.

The X-ray will demonstrate the sac filled with barium extending posteriorly and to the left of the pharynx. A flat fluid level is usually demonstrable.

The medical treatment is confined to the passage of esophageal bougies to dilate the esophagus and to overcome the spasm of the inferior constrictor muscle. Surgical treatment is advisable when the diverticulum increases in size and swallowing becomes progressively more difficult.

The surgical treatment consists of a two-stage operation as outlined by Murphy and later modified

by Judd. In the primary operation the pouch is exposed and freed from the surrounding tissues, the neck of the sac sutured to the edges of the skin, the wound closed, and the sac left unopened. The author modifies Judd's technique by partially suturing the neck of the sac before implanting it in the skin wound to prevent leakage after excision of the sac at the second operation. The second operation performed ten to fifteen days later consists in cutting away the sac so that mucous canal is left connecting the esophagus to the skin. The thorax then repeatedly cauterizes the tract with crude carbolic acid to effect closure.

Labey reports a case treated by the method described, in which, thirty-seven days after the operation, there was complete closure of the mucous tract and no difficulty in swallowing. The X-ray demonstrated complete absence of obstruction at the level of the lesion. DAVEN H. KELL, M.D.

Mayo, C. H. The Treatment of Diverticulum of the Esophagus. *Ann Surg* 93:123 267

The author reviews the literature relative to diverticula of the esophagus and concludes that these lesions occur more commonly than is generally supposed. The types of diverticula, the etiological factors, and the diagnosis are discussed. With regard to the diagnosis mention is made of examination by means of sounds, guided by previously swallowed silk thread, as developed by Plummer. The value of fluoroscopic examination after the ingestion of barium emulsion is emphasized.

With regard to the use of surgical measures in the treatment, the author states that the type of operation employed should depend on the size of the sac. When the sac is small, the operation can be done in one stage, the sac being amputated and the fistula closed with a row of chromic catgut. When the sac is large, it should be delivered unopened and amputated from ten to fifteen days later. In the May Clinic seventy-four patients were operated on for this condition. There were three deaths.

Jankowski. Total Esophagectomy (Ueber totale Ösophagektomie). *Festschr.* 9 246

The author reports the cases of four patients operated on for stenosis of the esophagus caused by lye. They are again able to take nourishment by mouth. In one case there has been increase in weight from 77 to 75 lbs. in two cases the connecting skin is still absent.

Previous to the plastic operation, gastrostomy was done for improvement of the patient's general condition. The plastic operation consisted in forming from the jejunum an antithoracic subcutaneous tube behind the transverse colon and in front of the periphragm of the stomach, extending up to the third rib. The esophagus was divided transversely, the proximal end fixed to the musculature, and the distal end sutured into the skin wound. The con-

struction of the ante thoracic skin tube was done by flap operation.

In the discussion of this paper Ziegler on Meckel pointed out that thick, soft sounds may be passed directly after the injury for the prevention of stricture. If perforation of the esophagus or stomach occurs, this is due to the depth of the erosion and not to the sound. SCHMIDT (2)

MISCELLANEOUS

Pringle, J. H. Intrathoracic Catastrophes Resulting in the Acute Abdomen. *Lancet* 1923 col. 279

The author cites the cases in which the clinical findings suggested the condition called by some writers the acute surgical abdomen. Both were characterized by severe abdominal pain and marked rigidity. The first patient was prepared for operation but was not operated upon because of a change in his general condition. In the second case an exploratory operation was done but the abdominal organs were found normal. Both patients died within a few hours after their admission to the hospital, the first of occlusion of the left coronary artery, and the second of rupture of the aorta. In both cases arteriosclerotic changes were found.

This report is made because in the author's opinion the possibility that lesions of the large vessels of the chest may cause symptoms resembling those of acute abdominal conditions has not been sufficiently emphasized. RALPH B. BETTMAN, M.D.

Childs, S. B. New Growths Within the Chest. X-Ray Diagnosis. *Am J Roentgenol* 9:1, 2, 73

Hall, J. N. New Growths within the Chest. *Am J Roentgenol* 9:1, 8

These two papers were part of a symposium. With regard to the X-ray diagnosis, Childs divides intrathoracic growths into two classes: (1) those in the mediastinum, and (2) those in the lungs. Conditions involving the mediastinum include Hodgkin's disease, lymphosarcoma, intrathoracic thyroid, enlarged thymus, cysts, sarcoma, cold abscess, and aneurysms.

Pneumothorax. This condition is generally shown by a piratical dense shadow projecting beyond the mediastinum with border either irregular in outline or circumscribed and clearly defined. It is usually bilateral, but occasionally unilateral.

Lymphosarcoma. Lymphosarcoma begins in the mediastinum and is apt to increase rapidly in size and involves the lung or pleura or both. Frequently enlarged supraclavicular lymph glands can be detected. Upon microscopic examination the latter determine the diagnosis.

Intrathoracic thyroid. This condition casts a fairly characteristic shadow of uniform density in the upper part of the mediastinum. The base of the shadow is upward. In its lower extremity its diameter is less. Its edges are well circumscribed.

Enlarged thymus. An enlarged thymus casts a small, inverted heart-shaped shadow which overlaps the aorta and the base of the heart. The X-ray diagnosis of this condition, however, is not particularly reliable.

Cysts. Cysts cast a characteristic shadow which is generally well circumscribed and of uniform density. A dermoid cyst is characterized by a distinctly clear cut border circumscribing a round dense area which usually projects from the right side of the mediastinum. This type of cyst is usually single and the shadow cast by teeth or pieces of bone may be seen within it. This finding and the expectoration of sebaceous material or hair are confirmatory. Also if frequent examinations over a considerable period fail to show any marked change in the size of the cyst and no evidence of secondary deposits in the chest, the diagnosis of dermoid cyst is greatly strengthened. A cyst may be overlooked especially if it is overshadowed by the heart. A large area of transmission of the cardiac impulse when neither the size of the aortic or heart shadow nor the intensity of the heart beat warrants such transmission, should suggest a mediastinal lesion.

Primary sarcoma. Primary sarcoma frequently has its origin in the thymus or thyroid, and may become very large. Besides producing marked pressure symptoms clinically this tumor generally shows distinctly in the X-ray examination in the form of a round shadow with a clear cut border.

Cold abscess. This condition frequently presents an appearance simulating that of new growth. It produces a dense shadow overlapping the shadow of the spine bilaterally. An ordinary abscess causes a dense shadow which may present beyond the edges of the mediastinum, but the diagnosis depends largely on the clinical history.

Aneurysm. The diagnosis of aneurysm is usually not difficult but occasionally a case is seen in which pulsation is diminished or absent. The low position of the heart and the flattened left ventricular margin are of value in the diagnosis.

One or more masses may signify tuberculous glands or primary or secondary carcinoma. The shadows cast by these conditions are practically the same. The fact that tuberculous glands are generally found in the posterior mediastinum while cancerous nodules occur more often in the anterior mediastinum, is of aid in differentiating them. Carcinoma of the esophagus should be mentioned with the growths of the mediastinum occurring in the posterior portion. An opaque mixture in the esophagus aids in distinguishing it.

New growths in the lungs are divided into benign and malignant. Excluding pneumoconiosis, new growths of the lung are very rare. Chikla has never seen an echinococcus cyst. Hall reports one. The malignant growths are divided into primary and metastatic.

Primary sarcoma. The occurrence of this growth in the lung is very rare. Chikla has no proved case to report.

Primary carcinoma. Primary carcinoma of the lung is not common, but occurs often enough to make it an important condition for the roentgenologist to bear in mind in all cases in which the X-ray, clinical, and laboratory evidence does not warrant a diagnosis of one of the more common pathological conditions. There are two types, that of the lobe and that of the hilus. The lesions of the hilus predominate and usually invade the parenchyma in their progressive development. The shadow is usually roughly circular shading off into the lung shadows, with processes radiating into the lung. In addition there are a few nodules with indistinct edges surrounding the central shadow or in relation to the bronchial trunks near the periphery.

The metastatic deposits in cancer may be general in both lungs or confined to one lung. The X-ray findings consist of generalized nodules in the lungs or localized deposits in the line of lung markings, generally involving the lower half of the lung and apparently beginning at the hilus.

When the pleura is involved in the metastasis before the lesions are demonstrated in the lung, the first sign detected may be only restriction of the movement of the diaphragm on the side which is affected.

Cancer metastases in the lung are comparatively frequent, especially secondary to carcinoma of the breast. X-ray examination of the lungs is therefore recommended before radical operation.

Hall speaks of the increase in the incidence of malignant disease within the chest. The diagnosis is made in from 80 to 90 per cent of cases in some clinics, but in others only occasionally because of a general lack of knowledge regarding the condition and of facilities to investigate it.

Malignant disease within the chest involves primarily and secondarily chiefly the following structures: the lungs, including the bronchi, the pleura, the mediastinal glands, the thymus, the thyroid, and the esophagus. Teratomata are also to be considered.

It is in the lungs and bronchi that the recently noted increase in malignant disease has occurred, and the opinion is general that the source of these growths lies in the frequent residual lesions left in the wake of the great epidemic of influenza. Undoubtedly the factor preceding the malignancy is chronic irritation with inflammation. This is borne out by the fact that malignancy in this group is practically limited to males and usually occurs after the fortieth year of age.

Primary carcinoma may be of the sharply defined nodular type at the root of the lung or of the infiltrating type spreading along the bronchial tree from the hilus. Occasionally it spreads along the thoracic duct.

Secondary carcinomatous involvement of the lung is very common. Warfield found lung metastases at autopsy in 178 of 516 cases of carcinoma of the breast. Metastases from primary carcinoma of the lung occurs most frequently in the lymph nodes,

and next most frequently in the liver. Bones and other structures are occasionally affected.

Primary sarcoma spreads out, and more especially about the median fissure on the left side and the median lobe on the right side.

Secondary sarcoma of the lung is more often seen as late development of a sarcoma of the testicle.

Metastases of hypernephroma are fairly common.

The symptoms are usually first those of inflammation, rather than the presence of new growth. Later mechanical pressure, destruction of tissue, etc., are noted.

The onset of the condition is slow and associated with dry cough and slight expectoration. Later the expectorated material becomes blood stained, and finally bloody and gelatinous. The disease is progressive and characterized by increasing cachexia, aspiration of bloody fluid from the chest, suggestive physical findings, and characteristic X-ray findings. The findings of the macroscopic examination of an excised lymph gland which has become enlarged are conclusive.

Tuberculosis and syphilis must be ruled out in every case.

Primary malignancy of the pleura is usually unilateral and causes the usual symptoms of pleurisy. The aspirating needle passes through the leafy pleura with difficulty and as a rule bloody fluid is withdrawn. The X-ray shows pleural thickening. This may be very marked. Inoculation metastases may develop along the needle track.

Secondary malignant disease of the pleura is much more common than primary and comes from the breast, stomach or mediastinum.

Sarcoma is less common than carcinoma.

Malignant tumors of the mediastinum usually arise from the mediastinal lymph glands or the thymus, but an aberrant thyroid or the oesophagus may be the point of origin.

Sarcoma is the most common mediastinal growth. Lymphosarcoma, Hodgkin's disease, and leukemia are not infrequent. Teratomata are rare.

Secondary growths from neighboring malignancies are common. McMAHER, HUNDETT, M.D.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Morgan, D. H. Brain Injuries Without Skull Fractures. *Ohio State M J* 9 3, 217, 57

Cranial injuries call for skillful observation and treatment to save the life or the future mental condition of the victim. These cases practically always are looked after primarily by the general practitioner and it is upon him that the burden of proper treatment and consultation rests. It is of prime importance that an early diagnosis of the cranial or intracranial injury be made. The diagnosis of skull fracture is not so important as that of increased intracranial pressure or brain injury. Each case is a study in itself and consultation with a surgeon and a neurologist should be had for all cases wherein brain injury or increased intracranial tension is suspected.

The symptoms of acute brain injury are headache, nausea, and vomiting. Unconsciousness may or may not be present. A dazed feeling and confusion may be the extent of the mental change. In mild cases the headache clears up in a few days in operative cases it ceases promptly as soon as the intracranial pressure is removed. The local signs of acute brain injuries are contusions, ecchymoses about the orbits and mastoid regions, hemorrhage from the nose, mouth, or ears, hematomata, and skull fractures. The general signs are shock, temperature changes, variations in the pulse rate, respiratory abnormalities, high blood pressure, paralysis, impairment of sensation, unconsciousness, restlessness, convulsive seizures, alterations in the reflexes, pupillary changes, and abnormal urinary, ophthalmic, and spinal fluid findings.

Surgical procedures should not be done without evidence of steadily increasing intracranial pressure or depressed skull fracture.

The author aims against indiscriminately operating on all skull fractures and urges conservatism. Intracranial tension, however, is an emergency and should be immediately relieved by decompression operation. Such relief of tension is effected in cases of fracture when the cerebrospinal fluid escapes into the nasal or aural cavities or directly externally. In the later stages of intracranial pressure with profound coma and manifestations of medullary ordema it is useless to operate as the condition is fatal.

The psychiatrist does not often see cases of acute brain injuries, his observations being limited to their after results. Many cases present mental symptoms and physical findings directly traceable to the injury. A few may be relieved by surgical procedures. In all such cases it is important to differen-

tiate functional and organic lesions, a differentiation which throws great responsibility on the psychiatrist, especially in medicolegal cases.

The general practitioner, the surgeon, and the psychiatrist therefore have a common interest in cases of this type, and should consult with each other in order to obtain the best possible results.

BEN N. WADE, M.D.

Grant F. C. The Use of Air in the Diagnosis of Intracranial Lesions. An Illustrative Case. *Surg Clin N Am* 9 3, 214, 89

The author describes a method of outlining certain intracranial lesions with air for X-ray diagnosis. If at operation a cyst is found, a cannula is introduced into it, the fluid is evacuated, and air is introduced. The roentgenogram will then give a outline of the cyst.

Another helpful procedure is the introduction of air into the ventricles for X-ray examination. The author cites a case in which this method was successfully used to determine the location and extent of a gliomatous growth in the silent areas.

MAURICE H. HOWARD, M.D.

McCannell, A. D. Aerocelia of the Brain, with Report of Cases. *Laryngoscope* 9 3, 2211, 20

The ten cases collected by Spiller, the author adds a new case which he reports with roentgenograms.

The patient, a woman, received a fracture of the frontal bone in an automobile accident. This was followed by partial loss of vision in the right eye with slight exophthalmos, double vision and turning in of the right eye due to complete paralysis of the external rectus. With the right eye, fingers could be seen at 13 in. In the left eye vision was 20/20. About three weeks later a second roentgenogram showed a large round area of diminished density directly beneath the site of the fracture into the right frontal sinus.

Two months later the area of diminished density had disappeared. Fundus examination showed the optic nerve to be rather white. Vision was 20/50 in the right eye and 20/30 in the left.

McCannell's conclusions may be summarized as follows:

Aerocelia of the brain, or air in the cranial cavity, is a comparatively rare condition, but probably not as rare as is suggested by the number of cases reported.

Aerocelia does not always appear at the time of the trauma or accident, usually developing two or three weeks later. In all cases of head injury, especially in fractures near the sinuses, a search should be made for this condition.

3. The roentgenogram is the only means of making a diagnosis

4. The pathology of the condition has not been definitely determined
CART. R. STERNICK, M.D.

Kurtzahn H. Roentgenological Observations on the Treatment of Epilepsy with Intensive Irradiation of One Adrenal Gland (Roentgenologische Bemerkungen zur Epilepsiebehandlung durch Intensivbestrahlung einer Nebenniere) *Arch f Psychiat Nervenkrankh* 92, 1931, 79

The technical directions for roentgen irradiation of the adrenals are given. The irradiation of one adrenal was undertaken by the author in the treatment of epilepsy at the suggestion of Klineberger. The left adrenal gland was chosen in order to avoid injuring the liver and pancreas. Injuries of the spleen were eliminated by the technique

T. rectangular fields were irradiated (1) dorsal field, in which diagonal lines could intersect each other at a point 3 to 3 cm lateral to the vertebral column at the level of the articulation of the eleventh rib and in which the longitudinal axis was parallel with the vertebral column and (2) ventral field, opposite the dorsal field.

The dosage which was effective in the depths corresponded approximately to the saturation dose of Seitz and Wintz for thin persons. Up to three irradiations were given at intervals of at least eight weeks.
WARRICK (X)

Punsep, L. The Surgical Treatment of Epilepsy Twenty Years Observations (Die chirurgische Behandlung der Epilepsie nach 20 jährigen Beobachtungen) *Klin Wochenschr* 9, 1931, 4

Punsep has operated upon 58 cases of epilepsy in the last twenty years. He reports the changes found at operation and the operative results in statistical form without any details. His conclusions are as follows.

Operative interference is indicated in circumscribed cortical epilepsy provided the attacks have not been occurring for a long time

In traumatic epilepsy operation is indicated only if cortical brain symptoms are present. In all other cases operation is not indicated, and in status epilepticus surgical measures should be employed only as a last resort.

In regard to the operative technique, Punsep emphasizes the necessity of forming a valve and removing all pathologically changed areas of the cerebral meninges and cortex. If no macroscopic changes are found, centers of increased irritability should be sought by electrical stimulation of the cortex and these should be excised to a depth of 5 cm.
WARRICK (X)

Anschuetz. The Results of Palliative Trephination for Brain Pressure (Ueber Erfolge der palliativen Trepanation bei Hirndruck) *Deutsche med Wochenschr* 9, 1931, 406

With regard to the results of palliative trephination for the relief of brain pressure, von Laszberg and Rann have reported nine cases, Dedekind four. Knechtner forty two and Brade thirty six. In this article Anschuetz reports fifty palliative trephinations.

As averages do not give a clear picture when the prognosis arises so widely Anschuetz groups his cases according to the level of lumbar pressure. In ten cases, however, the measurement was not taken because of the fear of complications. The four groups made are as follows.

Group 1. In this group there were seven cases with lumbar pressure up to 300 mm. Death followed the operation in one case (14 per cent). All of the other patients lived longer than one year and considerable number from three to fourteen years, with full or partial ability to work, depending upon the degree of optic atrophy present before the operation.

Group 2. This group included twenty four cases with lumbar pressure up to 600 mm. The mortality was 50 per cent. Eight of the patients died during the first year and only a small number lived longer than three years.

RESULTS OF SURGICAL TREATMENT OF EPILEPSY

Form of epilepsy	Operations	Attacks disappeared for				Attacks because		Not improved	Deaths
		years	Per cent	years	year	Fewer	Worse		
Essential epilepsy	20							17	
(a) Symptomatic epilepsy									
(1) Common traumatic epilepsy (fewest objective signs of injury of skull)	16							16	
(2) Common toxicogenic epilepsy (very objective signs of injury of skull)	26							16	
Tumorous cortical epilepsy									
Common cortical epilepsy (non tumorous)	11			16	1	16	16	16	
Uncommon cortical epilepsy (symptomatic)									
Epilepsy following encephalitis and syphilitic lesions									
Epilepsy and stasis									

(Punsep Surgical Treatment of Epilepsy)

Group 3. In this group there were two cases in which no measurement was made. According to the syndrome, they belonged to Groups 1 and 2. The results also were similar.

Group 4. Group 4 included seven cases with tumor pressure over 600 mm. Operation was the last resort, and proved injurious rather than beneficial. Since some of the patients came to operation in a comatose condition, the poor results were not surprising. Cushing's operation was performed and, when possible, was bi-temporal. In order to prevent bulging of the brain, sutures were taken in the muscle before the dura was opened. The sphenoidal portions of the calvarium were removed with flat forceps in the direction of the foramen spinosum. The trephining was carried further on the right side than on the left, to avoid the frontal speech center.

Although the most experienced neurologists admit that the diagnosis of tumor of the brain can never be made with absolute certainty, and confusion of such a growth with internal hydrocephalus, meningitis serosa, pseudotumor etc. is common, Anschutz agrees with Horsley that an early operation is indicated in all cases of continuous brain pressure.

PLATE (2)

Miller W. J. Ventriculocopy and Puncture of the Floor of the Third Ventricle. *Boston M & S J* 9 3 december, 1917

In cases of non communicating hydrocephalus the introduction of a small sound through the floor of the third ventricle and into the interpeduncular cistern allows cerebrospinal fluid to pass into the basarachnoid space. In the case of a child 4 months of age who was admitted to the Massachusetts General Hospital with marked hydrocephalus the ventricles were tapped but soon refilled. Indigo-carmin injected into the ventricles could not be recovered from the spinal fluid in forty-six minutes. Six months later the hydrocephalus had become extreme.

Under ether anesthesia an opening was then made through the fontanelle in the right temporal region, and through an incision in the dura a urethroscope was passed into the lateral ventricle and through the dilated foramen of Munro for exploration of the third ventricle. Under visual guidance a flexible sound was then passed through the floor of the ventricle and the opening enlarged. Fluid escaped through the opening at once. The urethroscope was then withdrawn and the incision closed. Ten days later simultaneous ventricular and lumbar puncture showed identical manometer readings, indigo-carmin injected into the ventricle appeared at the lumbar needle in thirty seconds, and the circumference of the head had decreased 1/2 in. Later results are awaited with interest.

The author states that puncture of the floor of the ventricle is easier and more satisfactory than puncture of the corpus callosum suggested by Fy and Grant.

WILLIAM J. PICKETT M.D.

Marlin, J. P., and Greenfield J. G.: Tumor in the Cisterna Magna. *Proc Roy Soc Med Lond* 923, xvi, Soc Neurol 3

Three years before he entered the hospital, the patient, a man about 45 years of age, had first noticed a pecking sensation in the left hand. This gradually spread, weakness in the legs developed and paralysis of both arms and legs ensued.

When examined, the patient was cyanotic and unable to move about in bed. The eye examination was negative except for ptosis of both lids. Sensation to pin-prick, heat, and cold was retained. Position sense was lost in the right arm. The muscle power was variable. After movement it was fair but the patient became helpless after lying in bed. The muscles of the abdomen and chest were flabby. There was no fibrillation. Movement was much weaker on the left side than on the right. The deep muscular reflexes were exaggerated. A double ankle clonus was present. There was no incontinence. The Wassermann test was negative. The patient died of hypostatic pneumonia.

Autopsy revealed in the cisterna magna a firm and pear shaped tumor which weighed 3.5 gm. This growth lay against the foramen of Magendie and its larger end pressed upon the right lobe of the cerebellum. The foramen of Luschka was patent. There was slight hydrocephalus. At the lower end of the medulla the tumor compressed the right dorso-lateral surface of the first cervical segment. Pressure was exerted also upon the cuneate and gracile nuclei. The tumor was a fibrous meningeal endothelioma.

WILLIAM J. PICKETT M.D.

Frazier C. H.: Some of the Surgical Problems in the Management of Pituitary Disorders. *Surg Clin A Am* 9 3 m, 33

Surgery is performed on the pituitary body chiefly for the relief of pressure, especially pressure on the optic tract. Three groups of surgical conditions are recognized: (1) adenomata, (2) tumors having an anatomical association with the pituitary structure such as tumors of the pouch of Rathke and of the hypophyseal duct, and (3) suprasellar growths or neighborhood tumors.

The symptom of chief importance is the visual disturbance. Usually this is more advanced in one eye than in the other. In at least 50 per cent of the cases seen by the author in the clinic, one eye was totally blind.

Radiography is always necessary as an aid to diagnosis and a guide to treatment. The primary intrasellar group of tumors cause a characteristic deep cup-shaped excavation of the sella, but the posterior clinoid processes are atrophied and the sella appears elongated rather than deepened. The cysts and duct tumor may show sharp delineations from calcareous deposits. The sphenoid sinus may be partially or practically destroyed by the encroachment of the growth. In such cases a decompression alone will not be sufficient. The third ventricle will be outlined in the encephalogram.

phobia, and but slight alteration in the cerebrospinal fluid.

The author agrees with Jenkins that the trans-labyrinthine route is the best for drainage of the external pons. In the case reported he drained the external by a horizontal incision through the dura below the lateral sinus. This was done because there was no sign of labyrinthine involvement in spite of the stormy course after the mastoid operation. All the characteristic symptoms and signs of external infection were present. The patient made satisfactory recovery.

STANLEY J. SIKORSKY, M.D.

Waleha, F. M. R. A Case of Secondary Carcinomatous Infiltration of the Pia Arachnoid of the Brain Presenting Exclusively Ocular Symptoms During Life. *Meningitis Carcinomatosa*. *Brit. J. Ophth.* 9:3, 11, 3.

Waleha reports a case of carcinomatous infiltration of the pia arachnoid so fine that it was not evident to the naked eye and produced only ocular symptoms instead of the symptoms of acute meningitis. The patient complained of progressive failure of vision in the left eye, diplopia, and headache. A squint and blindness of the left eye developed. There was occasional difficulty in swallowing but no nausea or vomiting. The patient lost weight. The left pupil reacted to accommodation but not to light.

The postmortem examination showed the left abducens nerve to be thickened and opaque. The pia arachnoid covering the ventral surface of the pons and the cranial nerves was thickened. This thickening showed cubical cell carcinoma. The growth was regarded as a secondary carcinoma from primary adenocarcinoma in the alimentary tract which was not found.

VIGOR, W. SCOTT, M.D.

Polenovskii, M., and Dubot, E. Glycemia and Glycocholia (Glycemia et glycocholia). *Prav. Med. Par.* 9:3, 11, 60.

Normally, the sugar content of the cerebrospinal fluid is parallel to the sugar content of the blood. In experimental hyperglycemia produced by the injection of dextrose, a similar increase in sugar was found in the cerebrospinal fluid. Accordingly it appears that there is an osmotic sugar equilibrium between the blood and the cerebrospinal fluid. As this was found in cases of diabetes but not in meningeal inflammatory processes, it may be of value in the diagnosis of diseases of the nervous system and meninges.

LOVELL D. VIGOR, M.D.

Foley, F. E. B. Alterations in the Currents and Absorption of Cerebrospinal Fluid Following Salt Administration. *Arch. Surg.* 9:3, 587.

The pressure of the cerebrospinal fluid and the bulk of the brain can be reduced by the administration of hypertonic solutions intravenously or by the ingestion of salt. The diminution of brain volume does not wholly account for the lowering of the fluid pressure as the latter has been found to be due to disturbance in the fluid absorbing and fluid

producing mechanisms associated with marked alteration in the normal currents of fluid in the ventricular system and cerebrospinal spaces.

In a review of the normal anatomy and physiology the author emphasizes the fact that the choroid plexuses are really extraventricular structures as they consist of masses of fine convoluted vessels lying outside the continuous layer of ependymal epithelium which then becomes invaginated over them and excludes them from the ventricular cavities proper. Very much as the peritoneal covering excludes the intestines from the peritoneal cavity.

The extraventricular fluid spaces or subarachnoid space is made up of the irregular crevices formed by the irregularities of the brain surface and the space intervening between the brain and the skull. This space is lined by a continuous mesothelial membrane, the pia, on the side of the brain, and the arachnoid on the side of the skull.

The main portion of the cerebrospinal fluid is a product of the choroid plexuses. In the subarachnoid space there is a second source of supply from the perivascular spaces surrounding the vessels of the brain substance. Under normal circumstances the flow is from brain substance to subarachnoid space.

From the subarachnoid space the fluid is absorbed into the dural sinuses along the arachnoid villi and along the sheaths of the cranial and spinal nerves, a stream which finally enters the lymphatic channels.

After the administration of salt investigations were made with regard to the volume of fluid absorbed from the subarachnoid space and ventricles, or the entrance along the accompanying pressure change, and the gross and microscopic identification of material precipitated from a foreign solution supplied to the subarachnoid space or ventricles. The salt was administered in 30 per cent solution either intravenously or into an exposed loop of the duodenum. The animals were anesthetized with urethane.

The experiment showed that salt administration establishes new ratios between cerebrospinal fluid production and absorption pressures resulting in decreased tension of the fluid in the subarachnoid space and ventricles of the brain.

The administration of salt induces the following changes in the mechanism of fluid absorption: (1) intra-ventricular absorption through the choroid plexus and ependyma; (2) absorption by the capillaries of the brain substance with reversal of the flow of fluid in the perivascular spaces; (3) an increased rate of absorption along the sheaths of the cranial and spinal nerves; and (4) direct absorption into the vessels which traverse the subarachnoid space.

The administration of salt causes alterations in the gross currents of the fluid which are incident to the changes in the mechanism of cerebrospinal fluid absorption described. Chief among these alterations in the currents of the fluid is reversal of the flow in the aqueduct and ventricular system.

MORRIS H. KARY, M.D.

Bordani, L. Roentgen Treatment in Rebellious Trigeminal Neuralgia (La roentgenoterapia nelle neuralgie ribelli del trigemino) *L'Actuatore* 9 2, 4, 38

The author treated eight cases of rebellious trigeminal neuralgia with the X rays and in six obtained a cure. In only one case was the result negative.

Roentgen treatment acts by freeing the nerve from the infiltrations compressing it and stimulating the circulation of the blood by producing a hyperemia.

In the opinion of some authors, there is a direct action upon the nerve itself, but Bordani believes this is doubtful because of the resistance of nerve tissue to the X-ray.

When the curative effect of the X ray is slight, it is probable that the condition is interstitial neuritis or due to perineural fibrosis.

If roentgenotherapy is not successful its use does not contraindicate surgical or other treatment.

W. A. BORDANI

PERIPHERAL NERVES

Salte, M. Regeneration of the Peripheral Nerve in Adults (Zur Frage der Regeneration der peripheren Nerven des erwachsenen Menschen) *Arch. f. neural. Anat. d. Wiener Univ.* 93 XII 85

The author reports the results of histologic investigations made on a series of nerve cicatrices due to gunshot injuries. Some of the sections were stained with acid fuchsin light green according to the technique of Alzheimer and others by the method of Biechowaty.

In the constricting fibers of Büengner fine granules were found which infiltrated the fibers longitudinally. From these acidophile granules filamentous formations extended which were surrounded by sheath derived from the plasma of the cells. The Büengner constricting fibers are regarded as derivatives of the sheath cells of Schwann rather than connective tissue cells. They are ectodermal formations, kind of peripheral glia cells and, like the glia cells, can form fibrils.

It is impossible to say definitely whether the new axon cylinder arises from these formations directly or whether the latter merely furnish the material for its construction. At one time today denies the sprouting of the fibers from the center but it is certain that the growing fibers can be formed only if material from the surroundings is supplied them. Consequently both factors are necessary—the emerging fibers and the sheath cells of Schwann.

In addition to the acidophile granules, there are also basophilic which, according to their behavior toward different dyes, must be designated as hyaline granules. It is possible that these are the preliminary stage of medulla formation. In that case, the Büengner constricting fibers could also take part in the formation of the medullary sheath.

MOSEWITZ (Z)

SYMPATHETIC NERVES

Brønning, F. The Trophic Function of the Sympathetic Nerve (Die trophische Funktion des sympathischen Nerven) *Alte Nerven* 913, 2, 67

Brønning states that the trophic disturbances following a nerve injury are due to irritation exerted by the resulting neuroma which acts on the sympathetic fibers coming with the spinal nerves. After operative removal of the neuroma the trophic injuries heal in a very short time. The same result is achieved by interrupting the conduction of the irritation by peri-arterial sympathectomy. Brønning recently observed a case in which, following this operation, there was lowering of the tone of the sympathetic nervous system not only peripherally from the site of the operation, but also in the regions lying central to it. As a result of the interruption of the main conduction of the irritation in the sympathetic nerve the tone was lowered in the entire extremity.

According to Leriche the cause of vasomotor trophic disturbances is the formation of small neuromata in the sympathetic nerve fibers similar to those which appear occasionally after injuries of the lower extremities about injury of the larger nerve stems. It is possible that the neuromata repeatedly found in the appendix are the cause of all the symptoms and that similar irritation giving rise to the formation of postoperative ulcers is produced in the sympathetic nerves by operative cicatrices in the stomach or intestine. Section of the sympathetic nerve leads to hypertrophy and the latter condition often results also from neurofibromatosis.

Brønning summarizes as follows:

An abnormal increase in the tone of the sympathetic nerve leads to degeneration of tissues, decrease in the sense of regeneration of tissue and elimination or an extensive reduction leads to hypertrophy. BRØNNING (Z)

Montgomery M. L. The Effect of the Ablation of the Superior Cervical Sympathetic Ganglion upon the Continuation of Life *Endocrinology* 9 3, VII, 74

In his investigations the author used three types of animals, namely rats, rabbits, and cats. The rats are of young, healthy stock, especially selected. The rabbits and cats varied considerably in age. The operative work was done during the months of February and March, 1923.

After exposure of the upper portion of the vagus sympathetic chain the sympathetic was carefully separated from the vagus in the cephalic direction until the superior ganglion was reached. This ganglion was then separated from the adjoining vagus ganglion. In effecting the separation considerable difficulty was experienced in the cats as in these animals the two ganglionic bodies are intimately associated. In the rats this association is less intimate and in rabbits the bodies are distinctly separated.

SUMMARY OF EXPERIMENTS

Animal	Age	Spinal Cord ganglion crossed ligament	Days between operation and death of animal	Condition of lungs	Post mortem eye examination
Kat	17 days	R. present L. present	7	No examination	No examination
Kat	100 days	R. absent L. absent	14	No examination	No examination
Kat	100 days	R. absent L. absent	14	No examination	No examination
Kat	200 days	R. absent L. absent	20	No examination	No examination
Kat 5	200 days	R. absent L. absent	20	No examination	No examination
Kat 6	200 days	R. absent L. absent	20	No examination	No examination
Kat 7	200 days	R. absent L. absent	19	No examination	No examination
Kat 8	200 days	R. absent L. absent	19	No examination	No examination
Cat 903	Young female	R. absent L. absent	25	Concave apex upper right lung	Present
Cat 902	Male young	R. absent L. absent	25	Normal	Present
Cat 904	Male young	R. absent L. absent	25	Normal	Present
Cat 905	Eight months	R. no cross L. no cross	Dead	Concave apex lower left lung	No examination
Cat 906	Old animal	R. absent L. absent	25	Normal	R. present L. absent
Cat 907	Old animal	R. absent L. absent	25	Normal	Negative
Rabbit	Old animal	R. present L. present	25	Concave apex and concave upper right lung	Present
Rabbit	Young animal	R. absent L. absent	25	Normal	Present
Rabbit	Young animal	R. absent L. absent	25	Normal	Present
Rabbit	Young animal	R. absent L. absent	25	Normal	Present

A group of 200 calls was located whose connections were doubtful though the circumstances seemed to indicate that they were valid rather than fraudulent.

After the separation had been effected the dissection was carried farther cephalad until the upper sympathetic roots are found. These fibers were then carefully pulled loose from their cephalic attachments, the sympathetic nerve as carefully sectioned about 1 cm. below the ganglion and the ganglion removed.

After the operation the animals are permitted to live for a period of 4 weeks to 6 months. They are then killed and examined. Especial attention was given to the lungs, and to an examination with the binocular microscope of the region of operation.

to determine whether any ganglionic tissue remained. The carotid artery and vagus nerve were then picked up and sectioned well below the region of the vagus ganglion. Dissection of these structures, together with the surrounding connective tissue was carefully carried to the base of the cranium, from which all connective tissue was loosened. The carotid and vagus were cut as they entered the cranium, the tissue being then removed and fixed in 10 per cent formal. Microscopic examination was made of all the animals reported except one. This showed complete ablation of the ganglion from seven rats, four cats, and three rabbits, all of which survived. With the exception of Cats 103 and 5 and Rabbit 1 (the lungs of all of these animals were normal)

The fact that these animals survived complete removal of the ganglia argues against the conclusion that these bodies have an endocrine function essential to the continuance of life.

The embryological development of the superior cervical sympathetic ganglia does not seem to set them apart from the rest of the sympathetic system as organs which might possibly have an obscure endocrine function.

CARL R. STERNER, M.D.

CARL R. STENYER, M.D.

Brüening, F. Angiopasm in the Pathogenesis of Vasomotor Trophic Neuroses: Further Experiences with Peri-Arterial Sympathectomy (Der Angiopasmus in der Pathogenese der vasomotorisch trophischen Neurosen. Weitere Erfahrungen mit der periarteriellen Sympathektomie). *Deutsche und Österreichische o. z. klin. W.* 57

It is not yet known how far upward the vasomotor trophic neuroses of angiospasm extend, although has yet been proved as the transitory contraction of the radial artery and the arterioles and capillaries. Bruening found from operations that the angiospasm in the arm extends high up, at least to the union of the brachial and axillary arteries.

He reports three cases of his own, in which operation was performed.

Case 2. This was a case of a borderline condition between Raynaud's disease, scleroderma, and scleroperiostosis of the right hand. The patient was a woman 47 years old. Operation relieved the pain and improved the trophoneurotic symptoms so that the patient was able to resume handicraft work.

Case 2: This was a case of scleroderma in oliving both hands of a woman 57 years old. Operation relieved the pain and improved the trophoneurotic symptoms, so that the patient could rite gain

Case 3 In this case there was beginning trophoneurotic gangrene in the toes of both feet, particularly the left foot, with spastic paraparesis due to transverse inflammation of the spinal cord following tuberculous spondylitis. The patient was a male 3 years old. Operation brought retrogression of the trophoneurotic disturbance, especially the gangrene.

In all three cases, as also in one other case of Raynaud's disease reported by Koemmel and Lotzsch, operation showed the brachial or femoral artery to be unusually narrow and the peria-

sympathectomy resulted in cure or improvement. In the author's opinion, the extraordinarily small caliber of the main artery is not a congenital vascular anomaly but due to a contraction (spasm) of the vessel, which in the diseases under discussion extends to the uppermost portion of the main artery of the extremity. As the removal of the periaortic sympathetic nerve plexus will cause this spasm to disappear after preliminary increase in intensity we may look upon it as the result of irritation in the sympathetic nervous system. The angospasm in Raynaud's disease, however, cannot be considered the disease itself; it is only its most important symptom, but its removal may bring about great improvement and possibly a cure. The basic disease is an abnormal increase in the tone of the sympathetic nervous system.

With regard to the indications for sympathectomy the author makes the following statements:

Success may be expected from the operation in all cases of vasomotor trophic neuoses accompanied by angospastic conditions.

A temporary good result may be expected in angospastic conditions (vascular crises) in the pre-sclerotic stage of arteriosclerotic gangrene and intermittent claudication.

3. The operation is perhaps relatively indicated in gangrenous frostbit and endarteritic gangrene and their sequelae inasmuch as the postoperative hyperemia favors nutrition.

4. When there is trophic damage to the tissues following nerve injuries it is indicated if it is not possible to allay the irritation of the sympathetic nervous system by other operative measures such as neurolysis, nerve resection, etc.

5. It is contra-indicated in sclerotic and diabetic gangrene.

In the three cases operated upon by the author cure was obtained in the first and third, and in the second, in which severe secondary changes had already appeared, there was marked improvement. Particularly remarkable was the prompt cessation of the pain in the first case.

The results of operation clearly demonstrate that the factor responsible for the vasomotor trophic disturbance is less a deficiency in nerve function than an increased irritability of the nervous system.

The operation must be performed as high as possible. In vasomotor trophic disturbances following injury it should be done above the site of injury. The artery must be well isolated for about 8 cm. Small branches of the artery, the division of which is unavoidable, should not be divided close to their exit from the main artery. Larger lateral branches can always be avoided. SONNEN (2)

Florescu, A. Observations on Cases of Partial Arterial Sympathectomy (Eingetragene Betrachtungen über einige Fälle partieller Sympathektomie). *Cl. juv. med.* 9. 1919.

In the case reported, a case of endarteritis obliterans with gangrene of the foot, the femoral artery appeared on exposure as a hard, pulseless cord. Partial arterial sympathectomy, as done according to the method of Leriche, but the gangrene progressed. When the thigh was amputated in its upper third six days after the first operation, severe spurting hemorrhage occurred from the femoral arteries.

For the treatment of osteomyelitis of the bones and joints the author suggests the production of an active hyperemia of the affected parts by partial arterial sympathectomy, iodine-light baths, and heliotherapy supplemented by passive hyperemia induced by Bier's method. S. ARLE (2)

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Rand, E. The Physiology and Pathology of the Peritoneum (Ueber Physiologie und Pathologie des Peritoneums) *Misc med Heschel* 9 2, 1844, 1479, 547

The author no longer gives injections of nucleic acid to increase the bactericidal power of the peritoneum as suggested by von Mikulicz. For the prevention of postoperative adhesions he divides gentleness at operation, avoidance of injury to the serosa, careful peritonization, effective control of bleeding, and stimulation of peristalsis after the operation. In peritonitis the cause must be removed if possible, the vermiform appendix always, a diseased gall bladder usually and if the patient's condition permits, a perforated peptic ulcer. Much under other circumstances might be sutured and closed off by gastro-enterostomy. Irrigation is to be employed only when the peritonitis seems to involve the entire abdominal cavity.

Of the greatest importance in the management of peritonitis is operation at the earliest possible moment. Many cases the establishment of intestinal fistula is beneficial. The use of tampons has been abandoned. Drainage tubes are inserted only when severely infected areas are found at the site of the primary perforation. When intraperitoneal hemorrhage has occurred, the blood is removed, filtered through gauze, and after the addition of a 1 per cent solution of sodium citrate is injected into the cavity. *Stacker* (2)

Cortain, W. A. Lymphaticostomy in Peritonitis. *Surg Gynec & Obst* 9 3, xxvii, 365

Treatment of septic and purulent peritonitis by drainage of the thoracic lymph duct in the neck is apparently curative. The author first produced in dogs a uniformly fatal peritonitis by ligating the appendix and meso-appendix, thereby producing gangrene. Twenty-four hours later he sectioned and drained the thoracic duct at the neck. Recovery resulted in seven days. The operation was followed by recovery also in the case of a 9-year-old girl with diffuse pneumococcal peritonitis.

The drainage done the thoracic duct by the operation was overcome by the establishment of collateral flow of lymph.

Experimentation demonstrated that in peritonitis fatal absorption occurs through the thoracic duct. It not only proved this fact but it disproved a fatal absorption through the subperitoneal capillaries or through the diaphragmatic lymphatics or the right lymphatic duct. It showed, moreover, perhaps the most extraordinary fact of all, that when a fatal absorp-

tion is overcome the peritoneal cavity is capable of looking after such a formidable structure as a necrotic appendix.

In the dogs operated upon by the method described the pus remaining in the peritoneal cavity disappeared without abdominal drainage and without apparent pocketing. The manner in which this was affected is a matter of conjecture.

OSCAR E. NADZAU, M.D.

GASTRO-INTESTINAL TRACT

Kopeloff, N. I. The Stomach as a Focus of Infection? *Med Press* 9 3, n. civ, 54

Kopeloff states that the stomach should not be regarded as a possible focus of infection. In his investigation, repeated analyses by the Rehfuss method in the same case yielded different results, and there was little constancy in the bacterial species. He found that there is no correlation between the degree of acidity and the species or numbers of bacteria found. In the absence of gastric lesions, the most important factor influencing the bacterial content of the stomach is swallowed saliva. The bacterial content of the food ingested is also of importance. *Benn* N. WADSWORTH, M.D.

Bennett, T. I. The Modification of Gastric Function by Means of Drugs. *Brit Med J* 9 3, 366

By careful experimental work on normal persons Bennett found that only a very limited number of drugs exert definite action on gastric function. This is in direct contrast to the enormous number of drugs and remedies which have been used in gastric disorders. Objective proof of the action of most of them has not been shown in a modern textbook. Pharmacology contains few references to drugs which will modify gastric secretion. It has been only recently that experimental work has cleared up many of the errors and traditional beliefs of the earlier writers.

Bennett found that atropine sulphate diminishes gastric secretion and is most effective when given by mouth, well diluted with water. When given hypodermically its action is not so constant or effective. Atropine also delays gastric emptying and prevents reflex gastric spasm. Its local effect on the gastric mucosa is as definite as its action on the conjunctiva.

To increase gastric secretion pilocarpine, as used in the author's experimental work, but its action was inconsistent. Moreover it produced salivation and the saliva, when swallowed, had a diluting effect on the stomach contents sufficient to reduce the acidity below its normal figure.

The drugs affecting gastric secretion after its solution are those which neutralize acid secretion and those replacing deficiency of hydrochloric acid. The effect of the alkalies are markedly influenced by the time of their administration. When sodium bicarbonate is taken on before the ingestion of food it is rapidly neutralized and after the meal there is an actual increase in the secretion of hydrochloric acid.

When we go to bed, we are often after a meal
th and already we tend to fall asleep and
there is a period of neutrality lasting nearly an
hour. Subsequently, however, there is a rise
in the gastric acidity to the usual level. Hepatic
secretion has been concluded to be uniform in
carbonate ion, but the rise in the gastric
mucosa to secrete and restore it that this effect
more than on the gastric acid being closer.
If given in the acid and be in the stomach.

(1) less stimulating effect than a warm bath, however, and much greater analgesic power. The proper time to give these drops is over 4 hours after the last dose of food. Sodium bicarbonate is of most value in the usual type of acid indigestion there is a risk of neutralizing a little of the hydrochloric acid.

1. Cases of delirium of hydrochloric acid large quantities of this drug must be given. Small doses with these usually prescribed by more than possible effect. It does not decrease the hydrochloric acid.

Among the drugs affecting gastric motility, tropine was found to delay gastric emptying and to prevent or retard gastric juice. Starchase, on the other hand, in small doses increases gastric peristalsis and causes the stomach to empty more rapidly than normally. When given in larger doses, however, it first produces violent peristalsis, and then pyloric spasm, which delays emptying. Adrenaline was found to have no effect on the stomach whatever whether given in large doses by mouth or by hypodermoclysis. B. & H. M.D.

Matheron, A. R., and Aronson, S. F. Observations on the Effect of Miltaralene on Human Growth Secretion. *Annals of the New York Academy of Sciences* 1967, 149: 41-49.

The author made 14 observations on the action of small doses of histamine on the gastric secretion of 10 healthy patients who are normal so far as gastric complaints are concerned. The one-hour test meal employed to compare the nature of the gastric response to a constant test meal (fasting and toast) is the histamine response. The fasting stomachs were first emptied of their overnight secretions by means of a siphon tube. Ten and 15 minutes later aspiration of the entire stomach content was again performed to determine the rate and nature of the resting secretion. Ten minutes later a dose of histamine was given by hypodermically and after this the stomach content or completely aspirated at 1 minute intervals beginning 5 minutes after the injection.

until the secretions had either exuded or turned to mucus. The preparation of bromazine used was organic di-phosphate. This is dissolved in water so that 1 c.c. of the solution contained 5 mgms. of the salt. Fresh preparations are used to guard against deterioration. The gastric contents obtained from crabs used not a minute for total acid (free hydrochloric acid, organic mucus and bile

The amount of gastric juice secreted per unit time in the talpids and the free hydrochloric acid showed an increase after the administration of histamine. This lag in this fifteen minutes and reached a maximum within a half hour. The decline of the maximum was more gradual than in the rat. The free and total hydrochloric acid curves are parallel in these curves. The maximum acidity was falling from 5.5 to 4.5.

The peptide class followed the secretory and activity curves but was less regular. It had a maximum in a shorter time than either the α or the rate of secretion.

There was found a bandage between the upper
part of the first mass that disappeared rapidly soon after
and it is possible that the bone or cartilage
effect of it is due to a important factor in the
area of the acromioclavicular joint as found in (frequent)

If 1 ml/min has a vasodilating action and shortly after its injection produces an intense flushing of the face. It has no other apparent action, however, as it causes no other reaction.

From these observations the authors conclude that bromelain has definite action in exciting the secretion of gastric juice and that it may be employed for this purpose & that gastric secretory function is determined by the gastric secretory function.

Figure 11. Kephala of the stomach (2) here
and for *Arctia* and *Arctia* 1910

Syphilis of the stomach is frequently overlooked. The atheroma case gives us little over a year. Anatomically the lesion is usually diffuse gastritis, but there may be localized gummas surrounded by acute or less diffuse infiltration. The edges of the ulcer; the mucosa and submucosa are thick and hard and its base is covered by a fully effluent material. The last may become healed or perforate and give rise to neighboring organs or cause pyloric obstruction or hour glass stomach by cicatrization.

Of the upper openings in peptic ulcer is the most common stomach ulcer but the least often recognized. A period of gastric disturbance is followed by haemorrhage vomiting pain in the back and chest, great loss of weight, deterioration of the general health and night pains. Of the haemorrhage

Four forms of gastric syphilis are distinguished usually: (1) the tumor (2) that with chronic gastritis, (3) that with pyloric obstruction, and (4) that with hour glass constriction.

Amicus Curiae

Schur H.: The Origin of "Hunger Pains" and Their Significance in the Diagnosis of Ulcer (Die Genese der "Hunger Schmerzen" und ihre Bedeutung fuer die Ulcusdiagnose) *Wies. M. Wchschr.* 19 2, XIV 654

Schur denies the existence of so called hyperacidity neuroses. Hyperacidity pains, he believes, are ulcer pains, and their cause is the inflammatory change which, at operation he has been able to observe frequently in the neighborhood of an ulcer. The impulses producing these pains are contractions of the muscles surrounding the inflamed area. The hydrochloric acid in the stomach is not a factor as the pains do not coincide with the high level of gastric acidity. In summing up, Schur states that hunger pains demonstrate the localization of an inflammatory affection in the region of the pylorus and when they are periodical prove that this affection is an ulcer. *Powers (2)*

Hunt, E. L. Leiomyoma of the Stomach, with the Report of a Case. *B. M. & S. J.* 9 5 October, 1909

According to Mallory the term leiomyoma means a slowly growing tumor made up of smooth muscle fibers. When mitotic figures, which indicate fairly rapid growth are present, the tumor is a leiomyosarcoma. In 1909, in an exhaustive search of the literature, Nasseti found the reports of 140 myomatous tumors of the stomach. Of these number the relatively benign myomatous tumors constituted less than one-third.

In a review of the literature since 1910 Hunt found only nine cases. These he summarizes briefly. His own case was that of a man 30 years of age who, as admitted to the hospital complaining of heartburn of two months duration and with a history of an attack of hæmatemesis and melena eight months previously and an attack of acute indigestion three months previously. Examination revealed severe secondary anemia. Blood was found in the stools. The X-ray showed an irregular duodenal cap and a persistent vacuole on the duodenal border. Transfusions were given, and a diagnosis of duodenal ulcer was made. At operation, a smooth mass, the size of a lemon, was found just above the pylorus. This extended under the liver and was adherent to the first part of the duodenum. A pylorotomy followed by posterior gastrojejunostomy was done. Convalescence was rapid. After the operation the X-ray demonstrated a functional stomach, but examination eleven months later revealed a rounded tumor in the epigastrium the size of an egg. This as interpreted as recurrence, and second operation as advised but was refused by the patient.

In general, these tumors are characterized by circumscribed growth of smooth muscle cells, the increase in size distorting their relations until they push outwards beneath the serosa or inwards beneath the mucosa. Their most common location is at the greater curvature or near the pylorus, but they may occur at any point in the stomach. The in-

cidence of the subserous and submucous types is about the same, and either may be sessile or pedunculated. In the submucous type particularly secondary changes such as hemorrhage, necrosis, and cyst formation, are common.

The gross specimen in the author's case consisted of an ovoid mass, the shape of a uterus, which was adherent to the pylorus and the first part of the duodenum, extended into the gastrocolic omentum and projected into the lumen of the duodenum by a rounded nodule the central portion of which was ulcerated. This accounting for the persistent vacuole shown by the X-ray. In consistency it resembled a uterine myoma and a cut section was firm and showed bands and whorls of fibers. The microscope demonstrated bundles of spindle cells which in general were thicker and had larger nuclei than those of normal gastrointestinal muscle. No regular mitotic figures were found. The fibrous stroma was scanty. The pathologic diagnosis was leiomyoma.

The author concedes that the clinical diagnosis of leiomyoma of the stomach is seldom possible, but he believes that the condition should be recognized in certain percentage of cases. In a table he gives the relative frequency of the various symptoms which may be produced by mechanical, ulcerative, or toxic causes. Twelve per cent of these tumors are silent and are recognized only at autopsy. Forty five per cent are palpable. Pain related to meals is present in 50 per cent of the cases. In 22 per cent there is dyspepsia, and in 42 per cent evidences of hemorrhage and secondary anemia are noted. The X-ray may show an extrusion defect, an hour glass constriction, interference with peristalsis, incarcera, cardiospasm or hyperperistalsis with an eight-hour residue.

In eight of the ten cases reviewed by the author complete recovery resulted. In one, perforation occurred, and in the author's case a recurrence developed. Early operation offers an excellent prospect of cure. If operation is delayed there is danger of hemorrhage, perforation, or recurrence.

DIXON H. KIRBY, M.D.

Ramond F., and Zisins, P. A Search for Autolytic Products Applied to the Early Diagnosis of Gastric Cancer (Application au diagnostic précoce du cancer gastrique de la recherche des produits autolytiques) *Bull. et mem. Soc. med. d. hôp. de Par.* 9 3, XLVII, 96

Histologic examination of cancerous tissue shows that the neoplastic cell has only transient vitality quickly undergoing autolytic disintegration. The ordinary products of autolytic degeneration are to be found in the blood and urine. Several investigations have demonstrated that such products are principally amines. The authors have proved that they also include polypeptides which form the stage between the peptid and amine. The authors sought for these substances in the blood, especially the serum.

In tabular form are given the findings in the cases of non-cancerous patients and seventeen cancerous patients. In the cases of cancer all the nitrogenous substances in the blood and urine were increased, a fact indicating an increase of the nitrogen metabolism due chiefly, the authors believe, to the catabolic process. This process occurs also in cases of rapid emaciation, acidosis, and other conditions, but whenever cancer is suspected it will be easy to eliminate the other conditions. On the basis of such findings in three doubtful cases, the authors were able to make diagnosis of gastric cancer which was confirmed at operation. W. A. BARNES.

Haden, R. L. and Orr, T. G. Chemical Changes in the Blood of the Dog After Pyloric Obstruction. *J. Exp. Med.* 933: xxviii, 377.

The authors report chemical studies of the blood and urine of dogs following pyloric obstruction. These confirm the observation made by other workers that there is a fall in the chlorides and a rise in the carbon-dioxide combining power of the plasma. There is also a marked rise in the non-protein nitrogen of the blood, consisting mainly of urea nitrogen and undetermined nitrogen.

The fall in chlorides is not due to the loss of chlorides in the gastric juices; the chlorine probably becomes bound in the process of protein destruction.

There is close relation between the fall in chlorides and the protein destruction.

A study of tetany should include the protein metabolism as well as that of the inorganic salts, since it is possible that tetany is due to protein split products rather than to alkalosis.

The chemical changes following pyloric obstruction are essentially the same as those following high intestinal obstruction. SAMUEL KARY, M.D.

Haden, R. L. and Orr, T. G. Chemical Changes in the Blood of the Dog After Intestinal Obstruction. *J. Exp. Med.* 933: xxxiv, 385.

The authors report study of the non-protein nitrogen, urea nitrogen, uric acid, creatinine, amino-acid nitrogen, sugar, and chlorides of the blood, and the carbon-dioxide combining power of the plasma in normal dogs and those which had had some type of intestinal obstruction.

Ligation of the duodenum, ligation of the duodenum with gastro-enterostomy, and ligation of the upper half of the ileum are followed by a fall in the chlorides, a rise in the non-protein nitrogen and urea nitrogen of the blood, and a rise in the carbon-dioxide combining power of the plasma. The uric acid, creatinine, amino-acid nitrogen, and sugar show no significant changes. The fundamental change is a fall in the chlorides followed by alkalosis. The degree of alkalosis depends upon the rate of formation of carbonate, the rate of excretion by the kidneys, and the extent of neutralization of the carbonate by acid bodies formed during the intoxication. DRAVER (7).

The fall in chlorides is probably due to utilization of the chlorine ion in the course of the intoxication. It is suggested that this use of chlorine is a protective measure on the part of the body.

There are indications that high intestinal obstruction should not be treated by the administration of alkalis.

The urea nitrogen is a good index of the protein destruction.

Ligation of the ileum at the ileocecal valve is followed by little increase in the nitrogen and no change in the chlorides or the carbon-dioxide combining power of the plasma.

The close similarity of the blood findings in intestinal obstruction, lobar pneumonia, and serum disease suggests that these different conditions may have a common chemical basis.

SAMUEL KARY, M.D.

Fischer, A. The Typical Forms of Late Obstruction of the Small Intestine Following Suppurative Appendicitis (Ueber die typischen Formen der späten strygen Appendicitiden entstehenden spastischen Darmobstructionen). *Gyngsteri*, 9: 213, 664.

The author calls attention to the important part played by the lower coil of the ileum in the origin of late obstruction following acute appendicitis. In five of seven such cases he found the following typical changes: (1) thickening of the serosa and rigidity of the entire intestinal wall, (2) shrinkage of the corresponding mesentery, and (3) the presence of band-like pseudomembranes. These changes had caused volvulus and strangulation.

In every case the author resected the twisted portion of intestine and made an anastomosis between the ileum and transverse colon. A cure resulted in every instance. Fischer believes resection should be done even when the intestine does not show necrosis, as otherwise the volvulus may recur.

VOY LONKAYER (2).

Meulenbricht, E. Two New Cases of Structures of the Small Intestine with Pernicious Anemia (Zwei neue Fälle von Duodenalstricturen mit pernicioser Anämie). *Wochf. f. Layer*, 9: 1323, 40.

In the cases of intestinal structure with pernicious anemia which he reported in 1920, the author adds two others. The first was that of a 64-year-old woman with three structures of tuberculous nature who died twelve hours after the resection, and the other that of a man of 3 years with an intestinal stenosis, apparently of cicatricial nature, which developed after numerous laparotomies.

The associated anemia Meulenbricht regards as a disease picture worthy of study. He believes it should be interpreted as an intoxication anemia due to the direct action of the products of bacteria, or to the absorption by the dilated, inflamed, and infected segment of intestine of substances which under normal conditions would not pass through the intestinal mucous membrane. DRAVER (7).

Symonds, C. The Therapeutic Value of Vomiting in Intestinal Obstruction. *Practitioner* 93, 103

The free administration of fluids principally water in suspected intestinal obstruction or acute appendicitis is sound practice.

After operation, vomiting should be encouraged especially in advanced cases, until the rejected material is free from bile.

When hiccough is present and vomiting does not follow the free use of fluids, the stomach should be washed out every four hours in severe cases and two or three times daily in the others.

The injured bowel will maintain obstruction for from 10 to 14 days. During this period the best treatment is the encouragement of vomiting.

The reflexes should be allowed to come into operation as soon as possible by omitting the pre-operative dose of morphine by performing the operation as quickly as possible and under minimum anesthesia, and by withholding morphine until the rejected material is free from bile.

When free vomiting has occurred, the symptoms of toxemia are absent and therefore the prospects of recovery after operation are greatly increased. *SAMUEL KERN, M.D.*

Abbott, C. R., and Hunt, E. L. Intestinal Obstruction by Gall Stones. *Boston M & S J* 93, October, 1900

Gall stones escaping into the small intestine through perforation of the gall bladder may be large enough to block the progress of the contents of the alimentary canal at the time of their escape or may cause such obstruction after they have become larger from concretions. Obstruction caused by true fecoliths is very unusual. The most common site for the arrest of gall stone is the jejunum.

Enteroliths may induce sudden acute obstruction, or if too small for this, inflammation, ulceration, and perforation. If large stone is present, the intestinal lumen becomes dilated by the accumulation of intestinal contents at the point of obstruction. This is followed by hypertrophy, the impairment of the circulation which causes inflammation and ulceration especially in the mucous membrane.

The clinical picture is that of acute or chronic obstruction of the small intestine. Stones that reach the colon seldom cause obstruction.

A barium meal examination should not be attempted in any question of acute obstruction.

The patients are advanced in years and usually give history of previous gall bladder disease and typical indigestion.

In the acute obstructive stage the onset is more or less sudden and characterized by vomiting which becomes more frequent and by the development of colicky pain in the umbilical region. The onset of the toxic stage varies according to the size of the stone, its rate of transit and the completeness and the site of the obstruction. The higher the obstruction the more violent the symptoms. Other symptoms

are continuous pain and constipation. Noisy flatus heard in the small bowel early helps to differentiate obstructive ileus from the paralytic type. Visible coils have a similar significance.

In cases of high intestinal obstruction operation should be done early before distention is pronounced. A cathartic should be given. The intestine should be incised longitudinally opposite its mesenteric attachment and the calculus removed. Proximal enterostomy with drainage is indicated when there is marked vena or overdistention. The prognosis is always grave.

The complete histories of four cases are given, together with the findings of chemical analyses of the calculi. *C. F. ABRAMS, M.D.*

Tinkham, H. C. Chronic Arterio-mesenteric Obstruction of the Duodenum. *Boston M & S J* 93, October, 1907

Arterio-mesenteric obstruction is caused by an abnormal pressure of the duodenum by the mesentery and the superior mesenteric artery.

A potential factor causing this obstruction is an abnormal position of the small intestine which not only produces an abnormal tension on the mesentery but also changes the direction of the pull, making it more nearly parallel with the vertebral column.

As the intestine is freely movable it is evident that the degree of obstruction will vary with the position of the body, and intervals may be relieved altogether. The obstruction is always associated with some debilitating or enervating condition, and is often found with other definite pathologic conditions.

This disease has no characteristic symptoms. Most of the patients are more or less neuroasthenic, and many have some other chronic disease. In the more severe cases the symptoms are referred definitely to the stomach and are very similar to those of pyloric obstruction or chronic dilatation of the stomach. Definite symptoms of toxemia and malnutrition are presented. X-ray examinations are not materially helpful in the diagnosis.

The treatment consists of measures to improve the general nutrition and posture to relieve the obstruction. In a large percentage of cases this is all that is needed. Medical management should be tried before surgery.

Duodenojejunostomy seems to be the most logical operation but three of the author's cases were entirely relieved by posterior gastro-enterostomy.

The histories of thirteen patients with this condition are given. *C. F. ABRAMS, M.D.*

Carrie, A., and Keller, J. The Diagnosis of Duodenal Ulcer by Means of a Rapidly Made Series of Roentgenograms (Le diagnostic des ulcères duodénaux par la méthode des radiographies rapides en série). *Presse Méd.* Paris, 1908, 30.

Cole's method of making a rapid series of roentgenograms has been adopted for the diagnosis of

duodenal ulcers, gastric lesions, and gall stones. Great rapidity is not desired. Lighten films are made in from five to fifteen minutes. The exposure must be rapid to guard against respiratory or peristaltic movements. The patient is to thus examined is placed in a recumbent position with a pillow under the chest.

Bulb deformities may be caused by three conditions, separately or combined, i.e. lesions of the mucosa and the walls, lesions of peri duodenitis, and spasms. The three believe that all bulb deformities may be reduced to three fundamental types: the niche, the incusura and bulbular retraction.

The shadow cast by the niche is just outside the normal limits of the bulb and is characterized by the irregularity of its borders and its acute angles. It is most often found on the upper border of the bulb and represents the crater of an ulcer.

The incusura, on the other hand is clear area within the limits of the bulb outline. This is of two forms, the organic incusura, with irregular borders, representing an ulcer and the spasmodic incusura, which is larger and deeper and has rounded edges. The latter may border on niche or be just opposite a point of ulceration.

Bulbar retractions assume the shape of a maltose cross, a coral branch, or tortuous canal. They are difficult to define as they correspond to an incomplete filling of the bulb and are not constant.

In conclusion the author states that the X-ray examination must be considered only a part of the clinical examination. *KILLICK SERIES, M.D.*

Saups, E. Roentgen Diagnosis in Diseases of the Duodenum (Ueber die Roentgen diagnosis der Duodenalerkrankungen). *Mitt. d. Gesellschaft d. Med. Chir.* 9, xxiv, 355.

This is a review of the roentgen symptoms and a discussion of roentgen technique with special regard to fluoroscopy. In forty-one cases in which positive duodenal findings were present it was possible to confirm the X-ray diagnosis by operation in only ten as most of the cases were given medical treatment.

The author reports also the roentgen findings in five cases in which diagnosis of duodenal diverticulum with or without ulcer was made. In a case of carcinoma of the pylorus invading the duodenum the bulbous duodenum was deformed. In similar case which had been free from symptoms until the development of a partial ileus, there were characteristic changes in the bulb and pyloric stenosis.

GLASSLEY (X)

Angelini, A. Colloid Carcinoma of Vater Papilla. A Clinical and Anatomico-Pathological Study (Carcinoma colloidale della papilla del Vater contributo clinico anatomico patologico). *Riforma med.* 9, 3, xxxix, 28.

The author's case of carcinoma of Vater papilla was that of a man 59 years old. The carcinoma was situated at the point of discharge of the common duct into the duodenum and was the same size and form

of a small mandarin orange. The duodenal mucosa and the pancreatic tissues were not involved. The nucleus of the tumor was Vater papilla. The colloid nature of the growth, verified by histologic examination, is especially unusual. Angelini has not found another such case in the literature although the possibility of colloid cancer of the bile ducts is admitted. The case he reports represents a very advanced state of degeneration. The autopsy revealed, in addition, a large interhepatic biliary cyst. There were no metastases.

W. A. BRYANT

Reh, H.: Roentgen Ray Treatment of Extremity Hemocoele T. tuberculosis (Roentgenbehandlung ausgebreiteter Hämocoele tuberculosa). *Zentralbl. f. Chir.* 9, xix, 46.

In all cases of intestinal tuberculosis, whether the process arises in the subserous or submucous layer, an attempt should be made to localize it. In the aid of deep radiation with the roentgen-ray provided high fever, obstinate diarrhea, and positive blood findings do not indicate the more quickly effective operative procedure. To illustrate the results of deep roentgen ray therapy the following case is cited.

A 36-year-old woman suffered for eight years with diarrhea, night sweats, and nervous complaints so severe that she contemplated suicide. During an operation for retroflexion, widespread tuberculosis of the ascending colon, caecum, and lower ileum was discovered. An ileocecal resection was next considered, and deep roentgen ray therapy—six sittings of ten minutes duration each, applied over four areas in three months—was given. Since the complaints and diarrhea continued, operation was performed. After separation of adhesions, the caecum was found free from ulceration, presenting only thickening of the wall at two points. In the ileum were three dense structures and single calcified tuberculous nodes. Above the structures the ileum was entirely normal. *GRACIAS (Z)*

Loosen, H.: Roentgen Observations on the Effects of Intestinal Irrigations of Different Quantities, Especially from the Therapeutic Viewpoint (Roentgenbeobachtungen ueber die Schwaerm- oder schwachen grossen Darmwaschungen unter besonderer Betrachtung therapeutischer Gesichtspunkte). *Fortschr. d. Geb. d. Roentgenstrahlen* 9, 2, xxx, 48.

Intestinal injections of less than 250 ccm., especially when given with an enema syringe, do not reach beyond the ampulla of the rectum, whereas those of more than 350 ccm. given with an irrigator enter first the lower sections of the large intestine and later the upper portions. It therefore follows that when it is desired to introduce drug directly into the circulation through the vena hemorrhoidalis, thus evading the portal circulation (in congestion of the liver for example) the drug should be administered with an enema syringe. Substances intended to reach more distant points of

testes, such as a nutritive and glucose enemata and injections of sodium carbonate should be given in quantities ranging from 5 to 500 ccm. In the author's experience the addition of common salt is of little value.

Groedel has found that when more than a liter of fluid is introduced, it passes the ileocecal valve. The possibility of influencing the small intestine medicinally in this way is therefore not to be disregarded.

On technical grounds it was impossible to follow the fate of suppositories, but it is evident that as the particles of the drug in these are so intimately bound up with fat which the large intestine can not split up such treatment is of little value.

VOLLHARDT (2)

Rogers, R. R.: Secondary (Acquired) Megacolon. *N. Eng. State M. J.* 9:321, 7.

The theories regarding the etiology of Hirschsprung's disease or megacolon, attribute the condition to numerous factors. The most prominent symptom is chronic obstipation with periods of diarrhea. Distention of the abdomen, tympany and at times fecal masses, may be made out on palpation. Pain is uncommon. The stools are thin and patty like in consistency and are passed with difficulty.

In more than one third of the cases only the sigmoid loop is affected, but in some the entire colon is involved. The pathologic picture consists of roughening of the serous coat and obliteration of the tenia and possibly of the longitudinal bands. There may be, therefore, an apparent lengthening of the colon as well as dilation. Microscopic examination shows chronic inflammation, round cell infiltration, and thickening of the mucosa.

The author reports the case of an infant, 1 year of age who had had marked constipation and difficulty and pain in defecation since birth. On examination, the abdomen was found distended. The thorax was normal except for rachitic rosary. The anal region was bisected by a thick fibrous raphe. The anal opening was about $\frac{1}{4}$ in. in diameter and could not be stretched sufficiently for the insertion of the tip of the little finger. The tools were flat and about the diameter of lead pencil. At birth the anus had been almost closed.

At operation the raphe was divided and as good sphincter as possible was constructed, but the condition as little improved.

When the child was seen again one month later it had had no stool for one week. The abdomen was markedly distended and there was a large mass filling the right side. The temperature was degrees F. Vomiting of material with decidedly fecal odor occurred. A barium enema showed the sigmoid to be markedly dilated. No barium entered the rest of the colon.

Operation revealed marked enlargement of the colon beginning just above the internal sphincter and extending upward to the hepatic flexure. The

walls of the sigmoid were enlarged and definitely thickened, but the white bands were still present. The sigmoid was emptied into the rectum but nothing further was done. The administration of mineral oil, oil enemas, and massage were necessary to keep the child fairly comfortable. Four months later the author began the administration of atropine to the limit of tolerance. This resulted each time in normal bowel movement. An X-ray examination of the colon showed no change since the operation.

There are two possibilities to explain this case: either the megacolon had been present since birth and the anal constriction was merely coincident to it, or the colon was normal at birth and its enlargement was due to the forcing of its contents through the abnormally tight sphincter.

WILLIAM J. PICKETT, M.D.

Rabers, M. J.: Pelvic Megacolon. Colectomy After Invagination of the Colon into the Rectum (Megacolon pelvici colectomia apertis invaginatione colorectalis). *Brussels med.* 9:313, 25.

The author reports the resection of dilated pelvic colon by invaginating the portion to be removed into the rectum. After this procedure the distal end of the proximal portion of the bowel was sutured to the cuff formed by the invagination. By this method the many disadvantages of an artificial anus are eliminated and the line of intestinal suture is protected. Resection of the invaginated bowel may be performed very easily through a dilated anal orifice.

LOVAL E. D. VAN, M.D.

Alzona, F., and Valenti, A.: A Case of Developmental Alterations of the Cecum and Pericolic Membrane (Sopra un caso di alterazioni di sviluppo del cieco e membrana pericolica). *Riforma med.* 9:3, 2202, 49.

In the case of a patient with pain in the ileocecal region and chronic constipation it was found in the roentgen ray examination made eight hours after the administration of a semisolid meal that the small intestine was completely empty and the cecum, ascending colon, and the first part of the transverse colon formed a twisted mass in the right upper quadrant. The descending portion of the transverse colon first began to distend six to eight hours later. Fifty-six hours after the ingestion of the meal the cecum and ascending colon were well filled, and after seventy-two hours a residuum was still observed.

The diagnosis made on the basis of the X-ray and clinical findings was ectopia and failure of rotation of the cecum with adhesions between the cecum and ascending colon, probably congenital and non-inflammatory.

At operation, a part of the cecum and ascending colon was found wrapped about by filmy membrane containing numerous vessels disposed parallel with each other and transverse to the great axis of the body. Exteriorization of the cecum disclosed long mesentery and absence of lateral, latero-

superior medial, and intercolic parieto colic adhesions. The cecum was higher than normal and more medial.

In the thor' opinion, this was case of non rotation, non descent and non fusion of the cecum
W. A. Barry

Schmidt E. O. The Treatment of Appendicitis with Complications. (Zur Behandlung der Appendicitis mit Komplikationen). *Deutsche Zeitschrift für Chirurgie* 9, 1914, 3.

The author classifies as appendicitis with complications of Grade I: cases in which the condition begins with infiltration circumscribed peritonitis, or feces formation as appendicitis with complications of Grade II: cases with diffuse peritonitis or the entrance of the infection into the circulation.

In the management of the complications of Grade I the rigid adherence to any one procedure or method of operation is not practical. Each case must be treated according to its indications. In cases in this group and also cases of fresh appendicitis, in which there is severe inflammation of the cecum, the care of the stump of the appendix is attended by extraordinary difficulties, the cecum tears with almost every stitch and the lower ileum is involved in the inflammatory process (circumstances which may give rise to ileus) the thor has performed entero anastomosis between healthy ileum and the transverse colon eight times up to date (also twice in diffuse peritonitis) with good results. If the entero anastomosis was impossible without endangering the healthy abdominal cavity a second abdominal incision was made. This procedure assures the greatest possible protection to the affected organs and favors rapid recovery.

The cure of diffuse peritonitis depends in great part on the patient's constitution, the method of management (dry instillation of ether irrigation etc.) is much less important. Subsequent examinations disclosed that after three months in 11 cases, and after four and five months in one case each, the anastomosis was no longer in use. For drainage, rubber tubing capped in vacuum is preferable to glass tubes.
Gomberg (2)

Jackson, A. S. Carcinoma of the Appendix. *Irch Surg* 9, 1915, 653.

Carcinoma of the appendix is often overlooked unless careful routine examination is made of all appendix removed. Suspicion is cast on the obliterated, or partially obliterated, harmless appearing type because it has been shown that one in every fifty three of these is carcinomatous.

In two series, totalling 8,030 appendices, which were examined microscopically by MacCarty and McGrath at the Mayo Clinic, forty were found to be carcinomatous. To determine the prognosis the thor followed these forty cases and twenty four which were treated subsequently. The total number of cases found in the literature with the twenty four here reported is 37.

Thirty-seven of the sixty-four patients observed in the Clinic are traced. Ten had died from accidents or conditions in no way related to the disease and ten had died from postoperative complications. The remaining thirty-three are living and most of them are still in the Clinic. They are well ten to fifteen years after the operation, ten five to ten years and ten one to five years. The malignancy was cured in 100 per cent of the patients traced. In only five of the sixty-four cases was positive surgical diagnosis made of carcinoma. In four other cases the lesion was suspected.

The consequences of failure to recognize the condition and remove the tumor cannot be stated because it is as yet unsettled whether carcinoma of the large bowel may originate in the appendix.

There is little significance in the clinical history of these cases. Fifty per cent of the patients gave history of previous trouble. The disease is seen twice as often in women as in men. The process should be carefully examined in all patients with a history of previous trouble in the appendix because many malignant ppendices may thus be discovered which otherwise might be overlooked.

In the twenty-four cases reported by the author the carcinoma occurred at the tip in twenty-one at the base in ten, and at the middle in one. The tumor usually grows suggests concretions than the fungus. On transverse section the lumen is seen to be obliterated by solid growth which is homogeneous and fibrous in appearance. When preserved in formalin, the growth is of an orange color.

There is considerable doubt as to the pathology of these tumors. Graham has divided them into two main types, the spheroidal cell carcinoma and the adenocarcinoma. In his series, 73.8 per cent of the cases are of the spheroidal type. Adenocarcinoma occurs later in life than the spheroidal type and corresponds more closely to the age at which carcinoma of small type occurs in the large intestine. Adenocarcinoma is the more malignant, the spheroidal type rarely invades the cecum or spreads by metastases to the abdominal glands.

The microscopic picture is that of irregular masses of epithelial cells closely packed, the cells surrounded by heavy fibrous stroma. The growth is confined chiefly to the mucous and submucous layers. The protoplasm of the cells is pale and scanty, but the nuclei stain darkly and are generally oval or round and with fewer irregularities than are presented by carcinomatous cells in other portions of the alimentary canal. In this series of sixty-four tumors one was diagnosed as villous carcinoma and the remainder were of the spheroidal type.

That chronic inflammation is a factor in the production of carcinoma is evident from study of the specimens. An analogy is the development of gastric cancer on an ulcer base.

The author concludes that pre-operative diagnosis of carcinoma of the appendix is impossible because of the absence of distinguishing clinical signs. The prognosis following early removal of carcinoma

of the appendix is more favorable than that of malignancy in any other part of the gastro-intestinal tract. There is a definite relationship between chronic inflammation and carcinoma of the appendix. The appendix should be examined carefully whenever the abdomen is opened and should be removed if at all suspicious. The relationship of caecal carcinoma to carcinoma of the appendix has not been proved.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Dunkin, V. R. and Graham, E. A. Functional Liver Tests: An Experimental Study. *Surg. Gynec. & Obst.* 93: 330-34, 1915

The recent prominence given non surgical drainage of the biliary tract in medical literature has served to emphasize the ease with which duodenal intubation may be accomplished, and this in turn has stimulated a revival of interest in test of hepatic function.

The most evident function of the liver is its excretion of bile but this is not its sole function. In a series of twenty five cases the authors drained the biliary tract by Lyon's technique and then attempted to make a functional test by injecting 50 mgm. of phenoltetrachlorophthalein intravenously after the flow of the C fraction of bile had been established and collecting all the bile possible during the succeeding two hours.

The output of phenoltetrachlorophthalein varied greatly even in those cases in which the drainage was effected most easily. In one case no phenoltetrachlorophthalein could be demonstrated in the bile over a period of ten days.

Later the authors attempted the Lyon-Meltzer biliary drainage on normal and on cholecystectomized dogs, and made a hepatic functional test on normal dogs and on dogs whose livers had been damaged, as by prolonged chloroform anesthesia. Five dogs were anesthetized with ether and a small stomach tube passed and guided manually into the duodenum through a laparotomy wound. The duodenum was then irrigated with a 5 per cent magnesium sulphate solution. In all of the dogs the gall bladder always contained considerable quantity of bile. In 15 of them the cystic duct was clamped and the bile from the other biliary passages compared with that of the gall bladder. In every case the bile from the gall-bladder was of a darker color and more viscid than that of the hepatic ducts.

In four dogs the phenoltetrachlorophthalein injected intra-venously, as subsequently recovered in the duodenum in from ten to fifteen minutes. When the cystic duct as left patent, the dye could be demonstrated in the gall bladder bile. When the cystic duct was clamped off prior to the injection the dye could not be found afterwards in the gall bladder bile. These results are similar to those obtained by other investigators.

At no time, however did the sphincter remain relaxed for a two hour period. Therefore, in dogs, a hepatic functional test by a method similar to that used in clinical cases is impossible.

The authors summarize their conclusions as follows:

1 Phenoltetrachlorophthalein is not satisfactory for a hepatic functional test based on the quantitative estimation of its output in the bile.

2 There are too many factors tending to prevent the complete collection of liver bile by the duodenal tube to warrant the use of the latter in such procedure.

3 The so called B fraction in non surgical biliary drainage is in part at least derived by gravity from the gall bladder.

4 Under ether and chloroform anesthesia the sphincter of Oddi will relax, but with this relaxation the gall bladder does not contract sufficiently to empty itself.

5 The intermittent flow of bile from the common duct is probably the result of an increase in intra-abdominal pressure during respiratory movements, and in all probability, as Harer and others have concluded, the gall bladder is emptied of its contents by the pressure of adjacent distended and congested organs during digestion and by the milking action of the duodenal peristaltic waves.

GEORGE E. BRIDLEY, M.D.

Hartmann-Keppel. Twenty Two Cases of Amoebic Abscess of the Liver. Their Treatment with Emetine (Vingt deux observations d'abcès du foie, leur traitement par l'émétine). *Bull. et Mém. Soc. de Chir. de Paris* 93, 1915, 6.

Hartmann-Keppel treated twenty two cases of amoebic abscess of the liver in Macedonia, Syria, and Palestine. Most of the subjects were soldiers. Fifteen were between 15 and 4 years of age. Two patients were women. Eleven had dysentery six had had dysentery previously and five had had no intestinal disturbances. A search for the parasite was made in only nine cases. The amoebae were found in the stools in every case but were discovered in the liver pus in only two. In four cases a liver abscess had been present previously but had been cured. In seventeen cases there was only single abscess, but in four there were two and in one, five. The site of the abscess was the right lobe in sixteen cases, and the left lobe in six. In three cases there were abscesses elsewhere besides the liver. The symptoms were classical.

One patient died a few hours after entering the hospital. Of the twenty one others, twelve were treated by simple surgical incision without any medical treatment. Both recovered but suffered a recurrence. They are then cured with emetine. In eleven cases given medical treatment (emetine alone or emetine combined with arsenic or other drugs) there were ten recoveries. In eight the abscess was resorbed and in two it was spontaneously evacuated. In six cases the treatment consisted of sur-

gical opening of the abscess followed by medical treatment. There were all very severe cases and only two of the patients recovered without complications. T died of the condition, one died later of pneumonia, and the other recovered after thoracotomy.

In one case medical treatment was found entirely efficacious. The patient, as then operated upon and recovered. Of the twenty-one patients treated, three died. The mortality was therefore 5 per cent, figure much below that previous to the therapeutic use of emetine.

Therefore it is apparent that in a large number of cases medical treatment alone may bring about recovery. Many surgeons have been of the opinion that emetine should be used only as an adjunct to operation.

Hartmann Keppel is in favor of opening of the abscess instead of simple puncture.

For good results, the medical treatment must be energetic and prolonged. After giving small doses in the beginning, the author reached a dosage of 75 to 150 gr in twenty to twenty-five days. *Amorbiae* are given with the emetine. Such high dosage causes some reaction but a serious nephritis developed in only one case.

In the series of twenty-five cases reviewed there are nine recurrences. Therefore the recovery cannot be considered as definite as no patient has been followed more than ten years. In reality recurrences are hepatic re-infections in persons apparently cured but still carriers of amoebae. The persistence of the parasite in the intestine shows the necessity of maintaining the treatment and carefully examining the stools for some time.

W. A. BERRYMAN

Jones, H. W. The Pittman Metabolism and the Van den Bergh Test to Differentiate Obstructive and Non-Obstructive Jaundice with Five Case Reports. *Urol. Ch. J. Am.* 1913, VI, 680.

Van den Bergh developed a chemical test to differentiate obstructive and non-obstructive jaundice. Before operation it is often very difficult to distinguish between obstructive jaundice due to such factors as carcinoma, common duct stones, pancreatitis, and hepatic cirrhosis, and non-obstructive jaundice of the acholic, hemolytic, and catarrhal types.

With Ehrlich's diazo reagent minute traces of bilirubin can be detected in the blood serum. The bilirubin present in the blood serum differs in the two types of jaundice. In the obstructive type it is free and uncombined, while in the hemolytic type it is bound to the albuminous material and liberated when alcohol is added.

Jones has tested this method carefully in a series of five cases, three of obstructive jaundice and two of the non-obstructive type. The test was very easy to perform and proved accurate in every instance.

Jones W. NURSE, M.D.

Rudberg, H. Traumatic Rupture of the Bile Passages (Ueber traumatische Rupturen in den Gallengängen). *Upsal. Lakart. Förel.* 1912, XVII, 223.

Rudberg discusses the disease picture of forty-one cases of traumatic rupture of the bile passages found in the literature. In sixteen cases the hepatic duct or one of its main branches was affected, in nineteen, the choledochus, and in two the cystic duct. In four the location of the rupture was not determined.

If the tear occurs in the anterior wall it is easily reached, but often it is retroperitoneal, in the posterior wall of the common duct behind the pancreas or the duodenum, and then is very difficult to approach.

The rupture is usually caused by violence applied to the abdomen. It is most common in middle life. In fifteen cases it occurred between the ages of 20 and 30 years, in eighteen cases, between the ages of 30 and 40, and in three cases after the age of 40. The youngest subject was 30 months old and the oldest 60 years. If the bile is infected, as for example in oedema of the gall bladder, peritonitis develops. If the bile is sterile, the picture is extremely characteristic. As the result of the matting together of neighboring intestinal loops, one or more pockets are formed which become filled with bile. In cases of rupture of the posterior wall of the ducts there are retroperitoneal collections of bile. The pockets are always coated with fibrin. They may contain large quantities of bile, even as much as 60 liters. Jaundice is absent or slight as the encapsulated bile is absorbed very slowly. The common duct, however, is compressed by this collection of fluid and no bile reaches the intestine. Therefore the feces are of light color.

As a result of operation which releases the bile through drainage, the color of the feces is restored because, in the absence of pressure, the common duct remains patent. This chronic peritonitis is regularly accompanied by severe cachexia due to intoxication induced by the absorption of bile, compression of the biliary organs, and failure of biliary digestion. The pulse is rapid, 140 to 150 beats per minute. Without operation all cases come to a fatal termination after a few weeks. In operating, the essential object is drainage. The most that should be done in total rupture of the biliary duct is suturing of the posterior wall, the anterior half being left open to prevent the subsequent development of stenosis. The drain should never be carried into the biliary duct.

The following case came under the observation of the author.

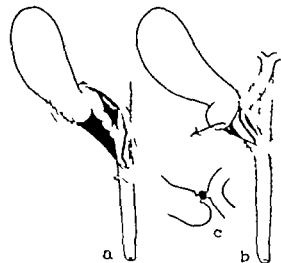
The patient was a man 45 years old who was lacerated in the abdomen by a horse. There was severe pain, but no vomiting. At operation the following day the abdomen was found slightly distended. Tenderness and dullness extended from the free border of the ribs to the umbilicus. Bile was discovered among the intestines. The hepato-

duodenal ligament showed a right angled tear. Separation of the edges of the wound disclosed a rupture of the entire anterior wall of the common duct, 2 cm. below the mouth of the cystic duct. Two drains of the thickness of a lead pencil were inserted and the abdomen was then closed. The drains were never light-colored. Following the removal of the drains on the sixth day the biliary fistula which remained closed slowly. Healing was complete in two months. (Post 2)

Homens, J. Identification of the Common Bile Duct in the Presence of an Anomalous Condition of the Biliary Passages. *Surg Gynec & Obst* 19, XXXI, 47

Injuries to the ducts during operations upon the bile passages are apt to occur when there is unrecognized anomalous arrangement or pathological distortion of the normal relations of the structures.

The cystic duct may be very short or the common duct may assume the appearance of the



Appearance and relation of gall bladder and cystic and common duct. In (a) common duct is shown below gall bladder. In (b) appearance and relation of common duct to gall bladder when it is formed by a single duct. In (c) normal cystic duct is shown. In (d) cystic duct is shown blocked by small stone.

of the duct. The result of the two modes of the gall bladder is either the common duct is recognized as the duct of the gall bladder or the operation of cholecystectomy.

After the peritoneum is distended and the gall bladder is retracted, the common duct is seen. The gall bladder is then retracted by the presence of a loop of the small intestine. The gall bladder is then retracted by the presence of a loop of the small intestine.

Judd, F. S. and Lyons, J. H.: White Bile in the Common Duct. *A Surg* 93 1211, 8

The authors review the literature on white bile in the common duct and the collected cases to date including nineteen cases from the Mayo Clinic.

The presence of a colorless liquid (without bile pigment) in obstructed common and hepatic ducts has been believed to indicate increased operative risk. In the Mayo Clinic series the operative mortality was 21 per cent in spite of cautious pre-operative measures and postoperative care including the use of calcium transfusions, etc. It is believed, however, that while the mortality is high it is probably no higher than it would be in a series of cases of complete biliary obstruction of the same duration with green bile in the common and hepatic ducts.

The nineteen cases of white bile in the common duct observed at the Mayo Clinic were found in the course of 649 operations on the common and hepatic ducts performed during a period of four years. In nine of these the obstruction was due to a stone in the common or hepatic duct. In six, to trauma at a previous cholecystectomy. In two to carcinoma (one of the pancreas and one of the ampulla) and in one to pancreaticitis. In one instance the white bile seemed to result from cholangitis. In no instance in which the gall bladder was present was it normal. Seventeen of the nineteen patients were intensely jaundiced at the time of operation and there had been no recent decrease in the jaundice. One patient had a biliary fistula. One was not jaundiced, although there was complete obstruction to the common duct by a stone. In this case cholecystectomy and choledochotomy with removal of the stone resulted in drainage of bile on the fourth day after operation. The patient made an uneventful, immediate convalescence, but died from acute hemorrhagic pancreatitis on the thirty second day after operation.

Rous and McMaster have shown experimentally that white bile occurs only when the obstructed ducts are connected with a normally functioning gall bladder and conclude that this fluid is a secretion of the mucosa of the biliary passages which collect when obstruction is present. The findings in the patient observed at the Clinic bear out these conclusions. The liver does not necessarily cease to secrete bile in these cases, but it is probable that in certain cases hepatic function may be suspended for some and entirely reestablished later.

Seelig, M. G. Bile Duct Anomaly as a Factor in the Pathogenesis of Cholecystitis. *Surg Gynec & Obst* 1933 XXXI, 23

Seelig calls attention to the fact that anatomical anomalies of the bile duct may be an important factor in the pathogenesis of cholecystitis. A case is cited in which the cystic duct emerged from the gall bladder somewhat laterally and then knicked on itself, forming a sharp curve upward along the left lateral wall of the gall bladder for 1.5 cm. and

then turned to the left and empty into the common duct. The cystic duct was incorporated in the wall of the gall bladder in much the same way as the appendix may be incorporated in the wall of the cecum. The posterior wall of the gall bladder was adherent to the common duct, so that when traction was exerted on the gall bladder the common duct pulled up in the same way as the normal cystic duct. Division of the cystic duct at its point of entrance into the common duct and mobilization of the gall bladder brought into view the common duct coursing behind the gall bladder and emerging from below its pelvis in the position normally occupied by the cystic duct.

Such an anomaly is important not only because of the technical difficulties it creates for the surgeon but also because of its relationship to the pathologic lesions of the biliary tract. The sharp kinking of the cystic duct produces stasis of the gall bladder contents which leads, first, to prodromal colic and later to non-inflammatory bile impaction which is followed in turn by concretum formation with attendant inflammation.

WILLIAM E. SHARPLEY, M.D.

Clark, J. G. A Comparative Study of Two Series of Gall Bladder Lesions. *Surg. Gynec. & Obst.* 93, 333.

The author has made comparative study of cholecystectomy and cholecystostomy from the standpoint of immediate convalescence, improved health, and restoration of working power. He chose for this study two series of 150 cases each. In the first series the ratio of cholecystectomy to cholecystostomy was approximately 1:1 while in the later series of cases this ratio was practically reversed.

Clark believes that with the improvement in technique cholecystectomy is no more hazardous than cholecystostomy.

The outstanding facts in Clark's series of cases are the decrease in postoperative complications and the improved convalescence in the patients subjected to cholecystectomy. The wounds healed more readily, abscesses occurred less frequently, and the length of time the hospital was decreased on an average by three days. The incidence of wound infection dropped from 8 to 4.4 per cent, and of phlebitis from 51 per cent. The relative difference between qualified improvement and lack of improvement as distinct in 100 of cholecystectomy.

On the basis of these findings the author believes that the total removal of the gall bladder may be extended to a larger percentage of cases.

WILLIAM E. SHARPLEY, M.D.

Pool, F. H. 1 Injuries to the Spleen. *Boston M. & S. J.* 93, 125-126.

Subcutaneous injuries of the spleen are much more common than open wounds, and are usually seen in men in the active period of life. A diseased spleen is enlarged and friable and may rupture spontane-

ously or as the result of injury. Any part of the spleen may be involved. In direct injury the laceration also may suffer. If the injury is intracapsular and the bleeding is slight, the blood may be absorbed. If the capsule is involved as well, more severe hemorrhage occurs, the amount depending on the extent of the injury. Delayed hemorrhage in cases of splenic injury may be a large subcapsular hemorrhage which has burst through.

The symptom of rupture of the spleen depends upon the extent of the injury. The mildest type may escape detection. Like a severe injury may be followed promptly by death. Pain, tenderness, muscular rigidity, and an increase in the size of the spleen are prominent signs of contusion. Rupture of the spleen gives rise to shock and evidence of intra-abdominal hemorrhage. The accumulation of blood within the abdomen can often be made out by percussion. Percussion of the right flank with the patient on the left side gives rise to tympanic note, while percussion of the left flank with the patient on the right side gives a dull note due to accumulation of clots (Chavannes). Hemorrhage gives rise to an early and marked leukocytosis. Delayed hemorrhage from the spleen is not uncommon and must be watched for carefully in all severe injuries to the left side of the abdomen.

Splenectomy is the operation of choice but the presence of adhesions and the patient's condition may render it inadvisable. It may be necessary to pack the splenic wound or ligate the splenic vessels and delay splenectomy until a more favorable time.

Since the diagnosis of splenic injury is often difficult, the incision made should be suitable for complete exploration and the care of any associated injuries.

Spontaneous rupture may occur in a diseased spleen. This is found most commonly in the miliary spleen. In the typhoid spleen it is more apt to occur during the second week (Melchior).

The rupture may be severe or slight. The symptoms of spontaneous rupture usually include pain in the left hypochondrium, syncope, and shallow respiration. The treatment is splenectomy. Suture of the spleen is not satisfactory as a rule as the sutures pull out because of the friable condition of the organ. Transfusion of blood or an infusion of salt solution should be given at the time of the operation.

In civil life open wounds of the spleen are uncommon. Usually they are due to bullet or stab wound and there is some traumatic injury to adjacent structures. During the war wounds of the spleen due to projectiles are also relatively infrequent. Their mortality is high because of the usual delay in providing primary care. The diagnosis in this type of case is difficult. If the injury is caused by a bullet the wound of entrance and of exit must be taken into consideration. The treatment is similar to that of the subcutaneous type. An incision allowing wide exploration is advisable. If the thoracic cavity is involved it is a good plan to repair and close this wound first and reach the spleen.

through an abdominal incision. Splenectomy is the procedure of choice also in this type of case.

WILLIAM J. DICKETT, M.D.

MISCELLANEOUS

Peters, J. J. Pneumoperitoneum as an Aid in Diagnosis. *J. Nat. M. Ass.* 9:3, 1933.

Because of its wide range of possibilities pneumoperitoneum has been heralded with the usual over-enthusiasm that greets every new method of aminutio. It is not considered the method of choice and for all intra-abdominal conditions its indiscriminate use should be discouraged. In certain classes of obscure intra-abdominal conditions, however, the desired information can be obtained in no other manner.

Pneumoperitoneum has been found of great aid in the diagnosis of diseases of the liver, gall bladder and kidneys, and of postoperative adhesions and retroperitoneal tumors. By other methods retroperitoneal masses are differentiated from intra-abdominal masses only with the greatest difficulty and with no degree of certainty.

The technique described by Peters was developed by Sante, and in one hospital has been employed in over 50 cases.

Early in this work the apparatus was complicated and cumbersome. The apparatus now used consists of the pump of a Potain aspirator, a short rubber connecting tube and two sterile lumbar puncture needles. An attempt is made to sterilize the pump. Air is used exclusively for the inflation.

Care must be taken to keep the patient's head lowered at all times, otherwise the pressure of the gas against the diaphragm will cause pain in the shoulders and embarrass the heart and lungs.

Pneumoperitoneum is contra-indicated by acute inflammatory processes in the abdominal cavity, acute respiratory infection, cardiovascular renal disease with cardiac decompensation and acute febrile conditions.

CARL R. STEINAR, M.D.

Eastman, J. R. Prevention of Peritoneal Contamination in the Drainage of Abdominal Abscesses. *J. Am. U. Ass.* 9:3, 1933, 833.

In one method of draining abdominal abscesses the abscess is approached by an entirely extraperitoneal route, the incision being made lateral to the classical appendix incision and extending only to the peritoneum. The parietal peritoneum is then peeled away from the musculature of the flank and the abscess opened bluntly at the bottom of the extra-peritoneal canal thus formed. The mortality from opening an abscess extraperitoneally should be practically nil.

In cases of retrocecal abscess with a firm wall which has not yet ulcerated the author packs the space about the caecum with loose strands of gauze and a rubber tube. This procedure is followed after eight to twelve hours by spontaneous rupture and evacuation of the pus. The gauze is then removed gradually and the tube comes out after ten days. Patients treated in this way remain free from recurrence of symptoms after many years.

In cases of large and deep appendical abscesses in which ordinary transabdominal drainage is unsafe a large cigarette drain with a protruding tuft of gauze is placed on the abscess. The wound is then closed around the distal end of the tube. Invariably rupture takes place within forty-eight hours at which time a canal has been established about the tube which is sealed off by peritoneal adhesions.

H. W. FRAZ, M.D.

SURGERY OF BONES JOINTS MUSCLES TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Martin, B. Bone Regeneration from the Periosteum. Development of the Interosseous Ligament in the Forearm and Leg (Zur Knochenregeneration aus dem Periost. Zur Entwicklung des Ligamentum interosum am Unterarm und Unterschenkel) *Arch fkl Chir* 93: 605-744.

In an earlier publication Martin reported observations demonstrating that in full grown dogs the two parallel bones in the lower half of each extremity exert a peculiar influence on one another. A period arthritis in the radius was responsible for period arthritis in the ulna at the same level, even though the limb was continually immobilized by plaster of Paris dressing.

A similar influence of the one bone upon the other has been observed in experimental osteitis and osteomyelitis. The author believes that, in man, the dense interosseous ligament which is analogous to the connection between the ulna and radius in the dog, constitutes a medium through which irritation is carried from one bone to the other. According to Bardeen's theory the interosseous ligament originates from the common protoplasmic anlage of both bones and constitutes a connection between their periosteal coat. This theory is confirmed by the author's studies on human embryos.

That the connective tissue of the periosteum is of the greatest importance in periosteal new bone formation as proved by Tsunodas's experiments, which demonstrated that transplanted cambium cells without periosteal connective tissue are unable to cause periosteal new bone formation.

In man the interosseous ligament between the ulna and radius is formed later than the corresponding ligament in the leg and shows distinctly the histologic structure of pure fascia. This explains why it conducts only pathologic stimulations. In the ligament of the leg which is laid down in an earlier period of development conducts physiological stimulations also, as shown by the remarkable regenerative capacity of the fibula. (Loomer and von Recklinghausen.)

Fromme, A. Late Rachitis, the Late Rachitic Origin of All Deformities of Growth and War Osteomalacia (Die Spätrachitis, die spätrachitische Genese sämtlicher Wachstums-Deformitäten und die Kniegelenk-Osteomalacie) *Ergeb fkl Chir Orthop* 9: 25.

The differentiation of late rachitis from the infantile type is difficult. The proposal of Schmori to select the end of the fourth year as the borderline has been the suggestion most generally approved. Infantile rachitis may undergo transition into late rachitis, and thus, without any free interval may

pass into osteomalacia. These three diseases should be grouped together. Osteogenesis imperfecta tarda, idiopathic osteoporathy rosis, and chondrodystrophism fetalis must be differentiated from them.

Late rachitis, even though previously described by Ollier and Trouseau, was recognized universally only after the exact pathologic descriptions of it by Schmori, Loomer and von Recklinghausen. In the author's opinion, many of the cases of endemic bone disease in the World War were of this nature and even if these are left out of consideration, the condition is more common than is generally believed.

In the chapter on the pathologic anatomy the conditions of calcification, the changes in the zones of growth, and metaphysis in the bone are discussed with the aid of numerous illustrations and an analysis of the works of Schmori, Loomer and von Recklinghausen. In the parts of the skeleton formed during the presence of the disease there is deficiency of calcium. This is true also of the growth cartilage and the joint cartilage. The newly formed bone is reticular and shows changes in the marrow.

The disturbance in the chondral ossification is characterized by the absence of the preparatory zone of calcification, widening of the zone of cartilaginous proliferation, and the appearance of numerous blood vessels. In addition, there is more or less broad zone of osteoid tissue toward the diaphysis, without distinct demarcation between the layers, thus accounting for the indistinct, indented, ragged appearance of the ends of the diaphyses in the severe cases. The course of the rachitis, in

which there are usually remissions and recurrences, leads to the formation of several zones of calcification (calcification bands). If these calcium bands are not completely decomposed, they move forward toward the diaphysis with growth (early rings). Of special importance are the islands of cartilage formed in the process of healing. The broadening of the ends of the joint in rachitis is probably due to mechanical factors. Schmori attributes an important part to the osteoid tissue. The same changes that are found in the epiphyseal cartilage appear also in the joint cartilage.

The clinical symptoms of late rachitis are the same as those of the infantile form, with the exception that in older children and adolescents subjective symptoms are mentioned and there may be retardation of actual development. The chief symptoms are pain, especially in the zones of growth, muscle weakness, edema of or the tibial swellings in the knee and foot joints, ulcers of the leg, deformities of various grades, retardation in the longitudinal growth and nervous excitability. Simon noted that during epidemics of the World War the clinical and roentgen picture in the cases of young men resembled that of late rachitis.

tis, whereas in young girls more osteomalacic symptoms were noted.

In the interpretation of the roentgenograms the changes in the ultimate bone and those in the zones of growth must be differed. The diagnosis cannot always be made from the roentgenogram because the hypoplastic cases show few if any changes in the zones of growth and in the early cases a roentgenologically demonstrable change is entirely absent. However in severe and moderately severe cases, a diagnosis is possible if the roentgenogram is considered with the clinical symptoms.

Among the most important signs of rachitis are the deformities of the bony system. The majority of the deformities of growth are caused by changes in the zones of chondral ossification. The flexibility of the diaphyses is dependent upon whether much or little osteoid tissue is formed. Besides the simple curvature, deformities develop at the sites of fractures and fissures. In addition, there are areas of disintegration. Through these which occur also osteomalacia, osteopetrosis, and hereditary syphilis, the author endeavors to explain an entire series of disease pictures of unknown origin (chronic edema of the foot, other anemias of ossification and true joint bodies). The most important and most frequent are the deformities which arise at the sites of chondral ossification in both longitudinal growth centers. Here it is the deficiency of calcium which causes hyperostosis, trauma. Another possibility is loosening of the epiphyses.

Individual deformities such as genu valgum and varum, coxa vara and valgus, Al delung deformity of the hand, brachial valgus, and cartilaginous exostoses are then discussed. Passing next to disturbances in the chondral growth of the epiphyses, the author summarizes his views regarding Perthes disease by stating that very many clinical, roentgenological, and microscopic findings indicate that the rachitic disease plays an important part in its origin, but that further investigation is necessary to answer this question completely. Curvature of the spine, pes planus and pes valgus are cited as examples of deformity of the zones of growth. Exostoses and epu formations on the os calcis and olecranon belong to deformities at the sites of perosteal ossification. Rachitis is the primary disease of osteochondritis dissecans leading to the formation of joint bodies.

The most important elements in the treatment of rachitis are the regulation of the patient's living conditions and the administration of phosphorus, cod liver oil, and calcium. This treatment is indicated also for recently developed deformities. Recently developed deformities can be easily corrected and immobilized in the corrected position (corrective appliances applied to deformities of the legs during the night according to the method of Boehm). In suitable cases of genu valgum and coxa vara, epiphyseolysis comes up for consideration. Later corrective dressings and apparatuses and osteotomy are in order the latter is indicated also in rare cases if correction at one time or gradually does not seem

possible after general treatment for at least two weeks and the administration of phosphorus and cod liver oil. General treatment and the exclusion of factors which might lead to fracture must be instituted also when the X-ray demonstrates the presence of areas in the bone indicating disintegration.

The prognosis of late rachitis is good, but with respect to the permanency of the cure it must be guarded (chronic deforming processes in the joints).

In the final chapter the author deals with the condition called osteomalacia—a term still used in spite of the recognized similarity of the disease to late rachitis. The numerous cases of this affection in the hospitals and nursing institutions during and after the World War is explained by the fact that it usually affects persons in poor condition and of advanced age in whom it is favored also by lack of exercise in the open air. Its frequent occurrence during pregnancy is explained by the extraordinary demands on the organism at this time. It is generally believed today that in osteomalacia there is a pluriglandular endocrine disease associated sometimes with hyperfunction and sometimes with hypofunction of one or more glands. The difference in pathologic anatomy between late rachitis and osteomalacia depends in the first place, upon the fact that the disturbances of chondral ossification remain here where the hyaline cartilage disappears (it remains in the ribs and joints). According to the investigations of Pommer and Looser the origin of the calcium free margins is not always decalcifying process as osteoid margins may develop from the deposition of newly formed bone even in bone which is fully grown. In the explanation of the localization in the skeleton the biological conditions in the bones are of importance as well as the mechanical. The investigations of Parfisch and Schmorl and those of Albers have shown that the bone diseases in adults observed within the last few years are true osteomalacia. The clinical symptoms show certain differences from those of late rachitis (higher incidence of the condition in women, predilection of the disease for the vertebrae and ribs, in which there may be true rachitic rosary). Rational feeding and the administration of phosphorus and cod liver oil constitute the essentials of the treatment.

With the rachitic malacic diseases—among which he distinguished two subgroups, the porotic and the hyperplastic malacia—on Recklinghausen included fibrous osteitis (metaplastic malacia), the deforming osteitis of Paget (hyperostotic metaplastic malacia) and osteogenesis imperfecta (myeloplasmic and byplastic malacia).

SEITZINGER (2)

Guenther B. Tumors of the Parathyroid Gland in Cases of Multiple Giant-Cell Sarcomata of the Osseous System (Ueber Epithelkomperichondromen bei den multiplen Riesenzellmarkomen des Knochensystems). *Frankfurt Zeitschrift für Pathologie* 9, 2, XXIV, 1915.

Following a review of the cases of parathyroid gland tumors associated with osteomalacia and re-

lated diseases which have been observed up to the present time the author reports the case of a 46-year-old man with osteomalacia, multiple, so-called myeloid and myelocarcinomatous tumors throughout the entire osseous system, and a tumor of the right parathyroid measuring 3.7 by 2 by 3.7 cm. A discussion of the nature of parathyroid-gland tumors and the brown, so-called giant cell sarcoma, and the relation of these two types of tumor to tumors of the parathyroid gland, is summarized as follows:

In almost every case in which changes in the parathyroid gland were found in association with multiple brown tumors of the osseous system, there was tumor-like enlargement of the gland.

1. The principal substance of the proliferating cells of the parathyroid gland consists of cells which are stained deeply with hematoxylin-eosin. There seems to be some relationship between the function of these cells and rickets and osteomalacia.

2. The extent of the hyperplasia of the parathyroid gland in cases of multiple giant cell sarcoma leads to the assumption that in this condition the osseous system is greatly affected, either indirectly by toxic substance, as Erdheim suggests, or directly through abnormal function of the parathyroid gland.

These facts considered in connection with the findings of other pathological and anatomical investigations and the clinical course of the tumors indicate also that in multiple giant cell sarcoma one is dealing with a chronic inflammatory or rather a regenerative or degenerative proliferation, instead of true blastoma. Meyer (2)

Osgood, R. B. Myeloma of the Vertebrae. *Boston M & S J.* 9, 3, October, 350

The author believes that many cases of myeloma of the vertebrae have been unrecognized. An early diagnosis is of importance. Attention is called to the often unrecognized fact that the symptoms are intermittent. Osgood describes a case which covered a period of six years and in which there was a remission of symptoms for nearly two years. He states that the best review of this subject is that in Ewing's book on neoplastic diseases. The bibliography in this book is highly commended.

Osgood recommends Christian's work on the histology of myeloma and Wells' discussion of the relation of multiple vascular tumors of bone to myeloma. Ewing's definition of myeloma is quoted as follows: A specific malignant tumor of the bone marrow arising probably from a simple cell type and characterized chiefly by multiple foci of origin, a uniform and specific structure composed of plasma cells or their derivatives, rare metastases, albuminous, and fatal termination.

Osgood states that he has no knowledge of the etiology of this condition although infection as a cause is sometimes suggested by the clinical picture and the general significance of the plasma cells. The disease at times resembles nutritional disorder

falling into a group with osteomalacia, and perhaps osteitis fibrosa, osteitis deformans, and rickets.

The chief interest of three cases reported by the author lies in the fact that spinal symptoms predominated. These cases were similar in character to the two reported by Turner. In both of Turner's cases the dominating symptom was pain of a boring character. In one there were symptoms of cord pressure and mental symptoms. The blood findings, as in Osgood's cases, were negative, and the urine contained no Bence Jones protein. In the five cases the roentgenograms of the spine were inconclusive, showing marked atrophy and some change in the shape of the bodies and the intervertebral discs. The pathologic tissue was characteristic.

Multiple myelomata may closely simulate tuberculous curies of the spine. Neither the history of the case nor the findings of the physical examination in the early stages are characteristic of the process. The absence of Bence Jones protein from the urine does not exclude the condition. In doubtful cases roentgenograms of the skull, the pelvis, and the long bones may suggest the nature of the disease, even when those of the vertebrae are inconclusive.

Thus far no treatment has surely influenced the course of this fatal multiple tumor growth. Radium and high voltage roentgen rays are therefore worthy of a trial. The symptoms arising from myeloma of the spine are lessened and may be temporarily held in check by recumbency and immobilization. If the disease is not too extensive spontaneous fractures may result if the bones are completely fixed.

Osgood urges that until some other nomenclature is generally accepted, the term multiple myeloma be restricted to the type of growth found in the cases here reported. PETER LEWIS, M.D.

Mayer, A. W. The Theory of Muscle Atrophy with the Basis of Experimental Investigations (Theorie der Muskelatrophie nach experimentellen Untersuchungen). *Mitt. d. Gesellsch. d. Med. Chir.* 9, 2, 1917, 65

As local muscle atrophy generally occurs after injuries and diseases in the bones and joints, Meyer comes to the conclusion that the term theory can easily be made to include all the theories advanced up to the present time (the theory of inactivity, the theory of inflammation, the reflex theory, and the stretching theory).

According to the traction theory the muscle tone is a condition of excitation which constantly causes decomposition of muscle substance but leads to atrophy only in the absence of movement causing hyperemia, as in artificial inactivation. Sustainable stretching of the muscle is in counter balance against the decomposing forces. LÖNNERUS (2)

Schubert, A. The Origin of Ischemic Contracture (Die Entstehung der ischämischen Contractur). *Deutsche Zeitsch. f. Chir.* 9, 1917, 34

The atrophy of muscles resulting in ischemic contracture reaches its height in six to eight hours, causes

permanent condition, rarely regresses spontaneously but does not lead to necrosis of the extremity. A vascular interruption alone produces either gangrene or no permanent change but it never results in a true ischemic contracture. Ischemic contracture is due to the simultaneous injury of an artery and nerve. The nervous regulation of the capillary circulation is arrested. A neuritis induced by trauma may also lead to considerable disturbance of the collateral circulation. An important factor still further favoring the development of ischemia in cases of simultaneous injury of an artery and nerve is an immobilizing bandage. Particularly in the elbow where the arteries and important vascular nerves are close together in narrow fascial spaces, bandage may increase the injury to the nerves caused by the pressure of an effusion of blood.

Therefore the use of a circular plaster of Paris bandage on the arm should be avoided. The condition of the artery and nerve should be investigated most carefully even before the application of a splint. If obstruction of the circulation threatens, the injured site should be exposed surgically. The ruptured artery can then be ligated. The nerve should be freed from its bed which has been narrowed by the hemorrhagic exudate, and the reduction of the fragments then effected. If the patient with ischemic contracture comes for treatment when the muscle is completely degenerated and replaced by fibrous tissue the treatment can consist only in correction of the contracture which is most prominent. HOMERUS (2).

Wolf, H. F. Acute Subacromial and Subdeltoid Bursitis. The Clinical Picture, Etiology and Treatment. *Am J Surg* 9, 3, 1910, 59.

This article is based on observations made in more than 200 cases.

The only difference in the clinical picture and etiology of the subacromial and subdeltoid types of bursitis is the localization of the tenderness.

There are two forms, the fulminating, in which the disease begins suddenly and with very slight warnings and reaches its height within a few hours, and a form in which symptoms are observed for weeks. The latter never becomes so severe as the former. The pain is excruciating every motion causing agony and the arm is generally pressed against the body.

In the fulminating form swelling of the shoulder has been observed.

The difference in the clinical picture may be explained by variations in the virulence of the infecting organisms.

The region of the bursa is exceedingly tender, the tenderness often extending into the surrounding tissues. There are no signs of inflammation in the skin but the temperature of the skin over the affected area may be slightly increased.

In about 90 per cent of the cases the shoulder alone is affected. In the other 10 per cent, manifestations of the underlying cause were seen in other parts

particularly in the arm of the same side the entire arm or parts of it being swollen. The joints themselves are not affected, only the subcutaneous tissue being involved, but the restriction of motion may be very marked. Bilateral bursitis is very rare but in some cases complaint is made of "rheumatic" pains in other parts of the body.

A brachial neuritis may precede, accompany or follow an attack of subacromial bursitis. Paresthesia in the fingers, hyperesthesia of the skin and tenderness of the nerve root will help in establishing the diagnosis of a complicating neuritis.

The clinical picture is due to an infection by streptococcus viridans. The focus is generally found in the teeth or tonsils.

When the attack follows an injury the injury caused a diminished resistance to the streptococcus viridans. The effect of subclavates is suggestive.

In some cases lime deposits are found but the treatment outlined cures the bursitis without changing the deposits. Occasionally deposits are found also on the unaffected side. The lime deposits may cause the irritation.

Subacromial bursitis is, strangely enough, often confused with brachial neuritis. While it is true that both may be present at the same time, an uncomplicated neuritis leaves the motion of the arm free, however severe the pain.

T. bursculosis of the joint is characterized by slow development and mildness of the pain. Tenosynovitis is never painful while the arm is kept at rest or when moved passively but there may be very sharp pain when active motions are attempted.

The treatment consists in very gentle massage with the whole hand, the application of wet dressings, and the administration of aspirin. In very severe cases light icebag or ice compress is indicated. Aspirin is not absolutely necessary but when used, should be administered in large doses.

The massage should be given once twice a day with very light pressure and continued for twenty to thirty minutes. No motions should be made until the pain subsides. There is no danger of the formation of abscesses.

This condition is due to a focal infection therefore the focus should be removed if it can be found. As it is generally possible to cure the condition by the methods described, only teeth with distinct abscesses should be extracted. In some cases in which the extraction of such teeth was done relief was obtained four to five hours later.

Not infrequently cases of old subacromial bursitis come under observation with acute exacerbations. These are due to a focus which was not removed during the first attack. The treatment is the same. The pain disappears just as readily, but the restriction of motion present before the new attack persists.

All forms of applying heat, the use of the hot water bag, baking and diathermy are strictly contraindicated as they aggravate the inflammatory process.

Of the hundreds of cases, only three were not cured and in these, success could not be found and the patient discontinued treatment after three to five visits. The cure was almost always effected within ten days and often in three to four days.

Cowan J. The Relation of Relation to the Sacro-Iliac Joint. *Phil Med J* 9 1 37

In a review of forty cases of sciatica, Cowan noted that the sciatic joint is frequently not the point of origin of the sciatic nerve and that practically every case presents the sciatic joint causes acute pain along the course of the nerve. He believes that the pain is neuralgic and usually caused by periarthritis or an arthritis involving the sacro-iliac joint.

Attention is called to the fact that the sacro-iliac joint is innervated by branches from the lumbosacral plexus, which is also the origin of the sciatic nerve. This plexus lies immediately in front of the joint being separated from it by only the piriform muscle. Therefore in extension periarthritis could produce neuralgia of the sciatic nerve.

The author shows by the pain of sciatica is produced by bending or walking or motion which use strain on the sacro-iliac joints. Latroque's sign (bending of the hip with the knee extended) is used as a test for sciatica. This movement not only strains the sciatic nerve but also puts strain on the sacro-iliac joint. The relief of pain in sciatica is obtained in posture which relieves strain on the joint.

On this assumption that the sacro-iliac joint is the seat of the trouble, the author directs his treatment to the joint, giving no treatment at all along the course of the nerve. He has obtained excellent results in the use of diathermy as adjunct. This treatment has been found superior to any other especially in chronic cases. *Brit N. West. Med.*

Kohl. Internal Rotation of the Leg. I. Discussion of the Hip Joint. (Ueber die A. rotation des Hüftgelenkes bei F. Krankheiten des Hüftgelenkes). *Arch. f. Klin. Chir.* 9 23 438

Out and not too of the leg is the rule in fractures. It is not due entirely to the weight of the leg as the freely hanging leg in a case of fracture of the femur is not fully rotated out. The decisive factor is the strength of the muscles and joint ligaments. The strongest joint ligament in the body is the iliofemoral ligament, which, under marked tension between the anterior iliac spine and the intertrochanteric lines, runs spirally around the upper part of the thigh. This ligament fits on the leg in extension and in this position offers considerable resistance to the external rotators of the femur and the leg falls in an outward direction.

Such relaxation may occur in pathologic conditions as in fracture of the neck of the femur. With the gluteus medius muscle, the muscles passing

from the pelvis to the thigh and leg elevate the large fragment and thereby produce shortening of the injured leg. I term it not then occurs as the result of the approximation of the points of attachment of the iliofemoral ligament and the action of the external rotators. Also in central location of the femur there is approximation of the points of attachment of this ligament in external rotation. I also vary there is displacement of the cap of the head downward and also back and where as the first deformity results from weight bearing in walking, the second deformity is caused by the action of the external rotators. I also vary the iliofemoral ligament is relaxed by the upward movement of the neck of the femur.

In a hemiculitis the attempt is made to prevent pressure of the tense ligament on the adducted joint by bringing the leg into a position of external rotation, slight flexion and abduction, the point of attachment of the ligament being thus approximated. If the consequent relaxation of the capsule does not suffice for the increased effusion, the point of attachment of the ligament are approximated still more by increased flexion with adduction and in rotation. If there is gradual union of the bone portions of the joint, the external rotators again in the matured position of flexion, adduction and external rotation results.

Scammon (2)

Perthes, G. and Welsch, G. The Development and End Results of Osteochondritis Deformans of the Hip Joint. (Calc-Less-Perthes), and the Relationship of This Disease to Arthritis Deformans. (Ueber die Entstehung und Endausgänge der Osteochondritis deformans des Hüftgelenkes. (Calc-Less-Perthes) sowie deren Zusammenhang mit der Arthritis deformans). *Arch. f. Klin. Chir.* 9 23 477

The authors report the findings made in subsequent examinations of fourteen cases which Perthes observed at Leipzig and Tübingen from the very beginning of the disease and examined after four, six, ten and thirteen years. Fifty-one very clear roentgenograms of the head of the femur are included in the article and are discussed with the histories of the cases.

The case of little girl, which was followed for four consecutive years at the Tübingen clinic afforded the rare opportunity of controlling the very beginning of the process and demonstrated that the softening of bone which is characteristic of osteochondritis deformans juvenilis may begin in clinically normal femoral head showing normal structure. The roentgen picture just as long as the process of destruction of the bone progresses the clinical symptoms consist of external inhibition of abduction diminished rotation in flexion and extension of the thigh. The Trendelenburg gait and absence of pain. On the other hand, improvement in the mobility is frequently observed at times when the destructive processes in the head of the femur do not seem to have reached their climax.

According to Perthes, the total duration of the entire process from the appearance of the first symptoms to the occurrence of the final form of the head of the femur is about four and one half years. The final results of this disease as shown in the roentgenogram may be divided into two typical forms, namely:

1. The spherical head (deal heading) which the authors observed in five cases, those in which the process of destruction did not advance beyond the epiphyseal line. In four the joint had become entirely normal but in one there was a slight lump. Abduction was possible to 60 degrees, and the Trendelenburg sign was absent. Four cases showed no shortening but in one case there was ultimately shortening of 5 cm.

2. The cylindrical or fungus shaped head. This was found by the authors in ten (two thirds) of the cases. In one case the condition was bilateral. These cases showed considerable decrease in the height of the head and broadening which curved it to project laterally beyond the acetabulum. The joint line of the head remained very sharp evidently because the cartilaginous covering of the head was at no time during the long course of the disease seriously affected. The neck of the femur was short and broad and in many instances had assumed various positions to the head. The clew foci in the bone had entirely disappeared as the islands of cartilage had formed a large amount of new bone. The acetabulum had accommodated itself fairly well to the changed head, having assumed a more elliptical form. In five of the cases the joint had become normal again. Four of the patients limped slightly and one limped markedly with a waddling gait. In seven cases the Trendelenburg sign had disappeared, in two it was slight and in one it was somewhat more definite but by no means so pronounced as before. The formerly restricted abduction had returned to an angle of 4 degrees except in one case in which it remained restricted because of extensive hypertrophy of the trochanter. Flexion and extension were normal, and rotation was only slightly diminished. The measurable shortenings amounted to 5 to 8 cm.

Of the patients who were re-examined later than five years after the beginning of the disease, the majority were free from pain. In those cases in which slight pain was still present the healing process was probably of entirely complete. In every case (without exception) constant improvement was noted after the third year. There was never any crepitation. All of the fourteen patients subsequently examined felt entirely well and walked without hindrance in the most arduous occupations.

These observations, together with about 50 late findings from the literature (the article is supplemented by a complete bibliography) confirm the favorable prognosis of this disease, which Perthes has consistently maintained. They show also that an operation on the joint (Trund) is not indicated,

and that treatment with a plaster of Paris cast or an extension apparatus is entirely unnecessary.

I regard the relationship between osteochondritis juvenalis and arthritis deformans which has been claimed recently, the authors state that this relationship can be deemed on the basis of the important difference between the two processes.

1. Osteochondritis juvenalis begins with a focal breaking down of the bone in the interior of the epiphysis of the head under an intact covering of cartilage, while arthritis deformans begins with changes in the joint cartilage followed by changes in the adjacent bony tissue.

2. Osteochondritis juvenalis is confined to a definite period of life previous to the completion of ossification of the head. Arthritis deformans has no such time limit, occurring most frequently after the completion of growth.

3. Osteochondritis juvenalis usually comes to an end after a definite period of time. Arthritis deformans constantly progresses.

4. With the complete cure of osteochondritis juvenalis, nearly all of the symptoms, which were light throughout the course of the disease disappear. In arthritis deformans the symptoms increase constantly.

The possibility that an arthritis deformans may become associated secondarily with osteochondritis must be admitted, but the cases observed up to the present time do not support this assumption.

The authors were unable to find in their material indication that trauma is the chief factor in the etiology of osteochondritis deformans juvenalis. They reject also the rachitic origin and are inclined to accept the theory attributing the condition to a congenital anomaly. The pathogenesis they describe as follows:

Small portions of growth cartilage remaining utilized in the bone foci of the growing head of the femur as the result of disturbance of development are stimulated to independent growth by an exciting cause such as trauma and infection. At the same time they partially destroy the already preformed bone and ultimately become ossified themselves. Weight bearing and the abnormal new formation of bone then cause deformity of the soft femoral head. When the proliferated cartilage is completely ossified, the disease process ceases.

MARSHALL (2)

Buade, M. Precocious Ossification of the Epiphyseal Lines and Its Relation to Chondrodysplasia. *Fettalia* (Über vorzeitige Wachstumsfugenverknöcherung und ihre Beziehung zur Chondrodysplasia foetalis). *Frankfurter Zeitschrift für Pathologie*, 46.

The author reports two cases of precocious joining of the epiphyses and diaphysis in long bones. The first was that of a 12 year old girl who for six months had pain in the left knee joint and walked with a limp. The left femur was 6 cm shorter than the right. Complete extension of the knee was impossible.

the prevention of adhesions and contracture of the scar tissue.

In the suturing of tendons or nerves in fresh injuries the author uses an overcasting suture of silk or linen. Very early active motion is instituted, and stretching of the approximated parts is prevented by careful splinting.

In order to prevent interference with the circulation, pressure on nerves, and postoperative oozing, no tourniquet is used. Effort is made to minimize traumatism. A sharp knife is preferable to the scissors.

The treatment should be carefully planned before operation and the motion of each phalanx tested separately. It is useless to do tendon reconstruction on a finger in the presence of ankylosis of the proximal interphalangeal joint. A tiny arthroplasty is necessary. In the distal joints this may be reserved for future operation.

If the deformity is limited to one finger and interferes with the use of the rest of the hand, amputation may be indicated.

Pedicle grafts from the abdomen, buttocks, and thighs are extensively used by the author to replace the shiny adherent skin over the injured tendons.

The palmaris longus is often used to fill gaps, and silk sutures have been found serviceable, especially in old ruptures of the extensor tendons at the terminal phalanx.

In old infections of the palm the introduction of fat is a valuable procedure. As a rule this graft is a pedicle graft of skin and fat. The structures, including the lumbricals, should be carefully dissected.

Where there is loss of tendon substance it is best to graft the skin first and delay the repair for a later operation. The author cites several cases to show the value of this procedure.

In cases of old injuries and infections about the wrist and forearm wide incision is necessary, often extending from the base of the palm up the forearm and dividing the annular ligament.

If nerve loss is great, it may be best to resect a portion of the lower ends of the radius and ulna to facilitate bridging.

Cases of diffuse tuberculous tenosynovitis and a case of diffuse anaplasia of the wrist were treated by complete excision. ROBERT V. FURBER, M.D.

Von Stukenrauch. Autoplastic Transplantation of Bone in the Soft Parts (Beitrag zur autoplastischen Knochenverpflanzung in die Weichteile). *Frankfurt Zeitschr. f. Path.* 9 2, xxviii, 477.

In 1909 the author removed the tuberculous first phalanx of the ring finger of a 3-year-old girl, together with part of the dorsal tendon, and transplanted into the defect the first phalanx of her third toe, with pieces of the dorsal joint capsule and a 5 cm. piece of the extensor tendon of the toe. Primary healing occurred.

After six weeks the metacarpal and interphalangeal joints were fairly freely movable with the use of a little force. In the roentgen picture the trans-

planted phalanx cast a dense shadow and its upper epiphyseal line was still distinctly visible. On the radial side of the transplant were several small ossification shadows.

After one and one half years the finger was shortened and movable as before. The bone shadow was considerably lighter, the compacta of the transplant had become very thin and the upper epiphyseal line could not be seen. On the radial side of the phalanx, the X-ray showed, in the area formerly occupied by the small ossification shadows, a small spur produced by apposition of bone.

After twelve years the shortening of the finger was more marked and there was no improvement in function. The transplant had remained healed in place without reaction, but its shape was somewhat altered. The roentgen ray showed that the compacta of the central portion had become considerably thicker and the spur had entered the bone substance of the phalanx. An enlargement of the plate suggested that during these years there had been an alteration in the spongy structure, a regularly constructed narrow meshed framework having been formed in the middle portion.

Contrary to the findings of other investigators, there was no continued survival of the epiphyseal cartilage. At the end of a year and a half it had disappeared entirely. Whereas heretofore it has been assumed that the transformation of a transplanted small bone is complete in about three months, this process in this case required much longer period.

In another case von Stukenrauch attempted to implant portions of bone in the soft parts left after disarticulation of the hip in order to obtain a stump suitable for a prosthesis. The patient was a 54-year-old woman with an osteochondrosarcoma of the femur. Immediately after extirpation of the femur the author grafted into the soft parts a 5 cm. piece of the tibia of the amputated limb from which he had curetted the marrow. He then sutured the muscles about this bone and into the peripheral end of the empty marrow cavity inserted a glass tube for the drainage of secretion. Unfortunately infection developed, making several incisions necessary. Because of this condition, the author sought to remove the transplant after fourteen days, but found it had become so united with the surrounding tissues that even the strongest pull with forceps at the projecting end would not loosen it. As the suppuration stopped, the transplant was finally removed after three and three fourths months. This was performed with difficulty because about the bony cylinder as well as in the acetabulum the tibia had become adherent to the surrounding tissues through newly formed bone tissue so that an uneven covering of bone plates remained in the stump. Such were clearly to be seen in the roentgen picture fourteen days after the operation. The removed graft was examined macroscopically and microscopically.

The erosions and processes of new formation in the transplant were all from the periosteum outward.

re present, the prognosis is unfavorable permanent compensation was necessary in every case of this type
Davis (2)

Fairbank, H. A. T. Operative Treatment of Dislocated Hips, Congenital and Pathological
Proc Roy Soc Med Lond 9 3 vii, Sect Orthop
5

Open operations resorted to by the author to effect reduction, to prevent relapse in a hip already reduced, and to relieve pain in an old dislocation. Cases suitable for open reduction are those of children between 3 and 6 years of age in which the dislocation has resisted manipulative attempts. Cases of unilateral dislocation in children over 6 years of age must be carefully selected. No cases of bilateral dislocation in children over 6 years should be operated upon. The author believes that manipulative reduction is usually the method of choice.

Operation must be preceded by manipulation and stretching of the muscles. On the operating table the patient is tilted slightly toward the normal side by means of a sand bag under the sacrum. An incision is made along the crest of the ilium to the anterior superior spine and downward between the tensor fasciae femoris and the sartorius. The muscles are stripped from the ilium subperiosteally. The front of the joint is exposed and the psoas partially or completely divided near the lesser trochanter. The joint is opened on its anterior aspect low on the neck. The capsule bounding the lower margin of the acetabulum is notched with a hernia knife and the acetabulum dilated. Reduction is attempted by manipulation, aided if necessary by a spoon-shaped lever. If the patient can stand further procedure an upper lip to the acetabulum is fashioned.

After the operation the leg is fixed in plaster of Paris either in the Lorenz or the auxiliary position. The plaster does not allow the knee. After 6 weeks the plaster is cut off the distal ends are removed and new plaster is applied.

The after treatment consists in retaining the leg in at least right angle abduction for six months and applying further casts with slightly diminished abduction for the next four months. Walking is permitted after the first six weeks unless extreme abduction is necessary.

In cases with much shortening, in which it is necessary to reduce the dislocation over the upper and back margin of the acetabulum, the author has discovered heaping up of the synovial membrane in front of the femoral head.

When the femur fails to remain reduced because of shallowness of the upper acetabular rim, the periosteal flap is turned down from the ilium over the upper margin of the acetabulum. The procedure is then the same as before except that the capsule is not opened. A curved incision is made in the periosteum parallel to and $\frac{1}{2}$ in above the upper margin of the acetabulum, curving down behind more than in

front. The periosteal flap so formed is then turned down with a flake of bone. The separation is carried just beyond the acetabular margin. The reflected head of the rectus is left attached and turned down with the flap. A crescentic bone graft including periosteum, the outer compact bone layer and some cancellous tissue, is then cut from the dorsum ilii, little below the crest, laid on top of the osteoperiosteal bone flap, medulla to medulla, and fastened to the flap by means of small bone peg cut from the ilium or with sutures. The wound is then closed and the leg put in plaster of Paris in abduction a little more than 90 degrees.

Three of eleven openly reduced hips remained reduced. Two showed good X-ray and functional results two and one half to four and one half years after the reduction. The acetabulum forming operation was performed on eleven hips. In three the result was satisfactory. In four there was anterior reposition, in one absorptive arthritis, and in one relapse. The other cases could not be traced.

The author believes that simple excision of the head of the femur through an anterior incision is the best method for the relief of pain in untreated imperfectly cured cases of dislocation.

Paralytic dislocations require especially careful selection as in many cases the severity of the paralysis contra indicates operation.

JOHN MITCHELL, M.D.

Stephens, R. Fracture of the Spine of the Tibia.
J Am Med Ass 9 3 lxxv, 905

The fact that fracture of the tibial spine is rare prompts the author to report the two cases he has treated in the past six years.

The first case was that of a soldier 9 years of age whose knee was twisted when he was tackled during a football game. When examined by the author the knee was extremely swollen, painful, and ecchymotic, and there was almost complete absence of motion. No lateral movement was possible. The X-ray revealed a fracture of the upper end of the tibia with fracture and separation of the tibial spine. Further information regarding this case was unobtainable.

The second case was that of a boy of 16 years who was also thrown by a tackle in a football game. A sudden sharp pain and a snap occurred in the left leg. Given treatment for sprained knee, he was unable to use the leg for four months. After non use for a while the knee became stiff. Examination made by the author was negative except for a slight lump. Extension was limited about 10 degrees. The X-ray showed fracture of the external tubercle of the tibial spine with detachment of two small fragments.

At operation, in which a U flap with its base upward was formed and patella splitting incision was made, fracture of the tibial spine and small bony fragments embedded in the fibrous tissue were found. Movement of the knee demonstrated that these fragments with the surrounding fibrous tissue mass became jammed between the femur and tibia and pro-

vented extension beyond 170 degrees. The man was released. The patient is not satisfied but the wound was closed with plastic catgut. Healing occurred by primary intention. The patient left the hospital on the eighteenth day. When seen again in 1 month and 6 months after the operation he showed almost a full joint.

The cause of fracture of the tibia is usually a severe injury associated with twisting of the body. In most cases rupture of the cruciate ligament occurs.

The other enclosures re follow.

I react re of it. I think again to in value
current but not worse. I generally believe d

Information: the c

3. Kuptar (the crucial element) is frequently executed.

4. If λ is not an α -root for the \mathfrak{g} , then

5. Cervical intraepithelial neoplasia (CIN) is usually associated with HPV infection. In recent cases, it has been found that CIN is associated with HPV infection in all cases.

6 1 old was still working of 1 new opet
1 was under test

A split plot design afforded the best response.

The final result is superior than an excellent in all cases.

J. H. MITCHELL, M.D.

Leclerc G: The Treatment of Dupuytren's Fracture by Screwing on the Internal Medial Axis (Le traitement des fractures de Dupuytren par le vissage de la médullaire interne). *Pres med Fr* 1975; 1: 1.

Leclerc describes Dupuytren's fracture as a fracture of the internal malleolus plus a fracture of the tibia, usually above its malleolus. As the fracture of the tibia is intra-articular and consequently with a pronounced deformity, a definite, proper fixation of the internal malleolus is all that is necessary for complete reduction. Leclerc uses open operation under local anesthesia for the insertion of wires through the fractured internal malleolus to hold it rigidly in place against the tibia. Movement of the ankle may be begun three or four days later. *Am. Jour. Surg.*, 1915.

Valley II An Undersized Fracture of the Cal
caneum (1 inch wide and 1/2 inch high) at
the distal end of the bone.

The three required 1° angles (10° plus localized on the wing of the lateral surface of the foot and the lateral 10° under the arches). The X-ray plates in each instance showed a fracture through the tip of the anterior process of the calcaneus. The X-ray was a full lateral view of the foot.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Hammer A. W. *Circoid Aneurism: What Is It? How and When Can It Be Treated?* *Med Times* 93, 4, 63

Very little is known as to the etiology or morbid anatomy of circoid aneurism and there is a divergence of opinion as to its proper classification. Many excellent surgeons consider it true aneurism while others recognize a marked difference in the conditions. Judd of the Mayo Clinic is quoted as follows: True aneurism should be distinguished from circoid arterial tumors by the fact that these tumors are composed of numerous pulsating arteries and veins, and the mass of true aneurism is isolated enlargement over a large surgical artery.

Factors favoring circoid aneurism are frost-bite arteritis, and traumatism. Some ascribe the condition to developmental fault in the vascular area affected.

The process shows itself as pulsating meshwork of arterial anastomoses from which pulsating caeculi radiate. It occurs most frequently in the scalp and next most frequently on the face and hands. Its greatest incidence is between the advent of puberty and adolescence.

The symptoms and signs of this condition present themselves after the disease is well advanced. They include bulging of the skin pulsation, tortuosity and twisting of the arterioles, thrill, and a bruit. Pain is caused by pressure on the cutaneous nerves.

In the treatment various measures have been tried. These include the injection of boiling water or an astringent into the mass, its destruction by means of caustics, electropuncture, ligation of one or both external carotids and ligation of the common carotid. The last procedure is very dangerous, especially in the aged.

The author recommends the removal of the growth by excision of the aneurism, and the control of hemorrhage by ligation of the afferent and efferent vessels. *I. Low and Barbara, M.D.*

Guyot and Jeannency. *The So-Called "Effort Thrombophlebitis of the Axillary Vein" (Thrombophlébite dite par effort de la veine sous-clavière anastomo-pathologique)* *Bull et mem Soc de chir de Par* 93, six, 5

This article reports the case of a patient without tuberculosis, chronic intoxication, or hepatic disturbances, who developed thrombophlebitis of the axillary vein after slight exertion. Excision of the venous segment was followed by recovery.

Such cases are rare, only about twenty being known. In the authors' case macroscopic examination of the excised venous segment showed the lesions

of endophlebith with hyperplasia of the cells of the intima, a very marked leucocytic reaction, and organization of the clot. These findings suggest trauma and slight infection. They have therefore great value, not alone from the anatomic pathological point of view but also from that of pathogenesis. Trauma may cause thrombosis, especially in those predisposed, and very often favors localization in veins with latent infection. *W. A. BRYANA*

Mitchell, J. F. *Mesenteric Thrombosis.* *A Surg* 93, LXV, 399

The author reports a case of mesenteric thrombosis, or, as he prefers to call it, mesenteric vascular occlusion, and gives a brief résumé of three other cases.

Mitchell's patient, a girl of 30 years, with a history which was negative except for indefinite digestive disturbances and mild anemia, was suddenly seized with violent epigastric pain accompanied by frequent vomiting. Six hours after the onset, physical examination revealed nothing abnormal, the pulse and temperature were normal, the leucocyte count was 10,000 and an enema produced normal movement, but the intense abdominal pain persisted. On the morning of the second day the condition was essentially the same except that the abdomen seemed slightly full. There was no tenderness, rigidity or dullness. At noon of the second day the pulse was 120 but the temperature was normal. Operation was performed about twenty-four hours after the onset of the condition.

Upon the induction of ether anesthesia the patient stopped breathing and showed signs of deep shock, but was revived by artificial respiration. This was repeated on resumption of the anesthetic. Solino was then given subcutaneously, ether was administered from time to time through gauze, and the patient restrained by assistants. When the abdomen was opened, large quantity of bloody fluid escaped and black coil of intestine the lower 8 in. of the ileum, presented. The mesentery of the involved bowel was thick, edematous and infiltrated with blood and there was no pulsation in the mesenteric vessels. The affected bowel was resected, lateral anastomosis was made and the abdomen closed with drainage.

For forty-eight hours the patient was in shock but then reacted promptly and convalesced rapidly. Three weeks after the operation she was walking. Three months later she was in perfect health and the only effect was an increased number of bowel movements.

The pathology of mesenteric thrombosis is essentially that of hemorrhagic infarction. In 60 per cent of the cases it is produced by arterial occlusion,

[illegible]

Never and give up I will meet a I
rule k tel t ep t en or bout the r tel
the m t dung I best p m In man
as I u ant thert th journal th be
ing tributed t the d t part of the monthly
I derbe d l m I du te t the

press t but right l fess d e or t d l a t t i
 put in the d t r o l d i p o l a w l m i
 t r e e t w e s t o f t r e e n o r s h e b e l t
 d t i n t t u r n o t t h u l m b e l t e d t h e
 b k l t s e d t e e f t t h e p e n i t e n t i a
 l m t e t a s e l l s e s t e t h e t w o b u s s e s
 t h e o n l y m b e l t b u t t d e s e e f t e r
 t h e t w o l e h o u s e c o n t i n u e m e n t i n
 a r e s e b e r b l o d l u t e t h e t e m p e r a
 t u r e s e c o n d i t i o n s b u t a s s e n t t h e
 c o n t r i b u t i o n e d b l a s s e d t h e p a i n e b e c a u s e s
 s e l l t a s t t h e p u l s e p a i n e t o a c c o m p a n y
 h e p a i n e s e c o n d i t i o n s t h e p a i n e s e c o n d i t i o n s
 t h e p a i n e s e c o n d i t i o n s t h e p a i n e s e c o n d i t i o n s

[illegible]

The 1st (most) unit in immediate reaction of the field res with sal margin of health low 1. The most lit in 4 operat d from how ex. estimate 1 times 75 to 80 per cent 4 cord or 11 1 the mean of small low 1 high ma be shi inserted in least 50 per cent 1 t reser tion of m. If moment may be attended by serious mot and disorders (the usual manifest ion of mot. ldn. disorders due to excessive const 1 gel of d. rth and 2a) to absorb 1

Diagnoses report of spontaneous recovery in the
period of observation on 1 year interval
explains in the usual rat and procedure of the
symptoms are in 1 in 1000.

Key: Embolotherapy in the Treatment of Car-
diac Disturbances in the 1980s
J. J. G. van der Wal, M.D., Ph.D.
Amsterdam, The Netherlands

h. has removed ribbons from stern of the extremities ten times in the cases of nine patients. The operation is performed in 10 min. hours 1 hour 4. After the earliest symptoms (regression occurred) 11 out of the operations last the rest of the cases the suit were good.

The final complete sacral embolization was performed in 1981 by the above removed an embolization.

bulus from the femoral artery six hours after the race. The second successful operation was done by her.

Key report fill -one cases from the 1. entire b-
lating b. n in there is no case of free v
when the operat n performed after t only four
hour for t led the third six cases such
oper tel upon w then t only four hours la
teen c was the ex t were good in t e patient
des loved and in xhi de the occurred ummber of

The embolus was removed thoroughly by being crushed thoroughly with the without tearing the clot. Clamps placed above and below the embolus held it and crushed it just the artery.

The L. Ventr. S.D.

BLOOD TRANSFUSION

Bright, A. L. New Principles of Therapeutic
Toxicology, Vol. 2, p. 1141-43

This is a long paper reviewing the history of
therapeutic inoculation.

The above 11 leading roles in *Followers*

The current problem may be the presence of the pathogen organism, and if this is not understood, of the true threat to it will manufacture a vaccine from it.

The vaccine must consist of living germs, but these must be attenuated.

When appropriate items are assessed, crime which can be treated produces more rational clinical action has been obtained. The various empirical will not be of formal

4. If eternal actions should be implanted sub-
sistently

5 was in them as applicable only to the
infant.

6 The protection conferred by the scheme is also specific: other kinds of protection are not

taind only agt is the species of pathogenetic agent of which the above consists

7. Protection is obtained after the type of the
we more d from the d i of modulation

9. Vaccination can be reported in the incubation period of disease prior and the incubation period has still more than ten days to run.

It has been insisted the general principle that
 assumes the living or dead germs as such, not be
 the actual types that these must be devoid of
 interest with the living assumes both
 they're dead or live can be in reality only
 another substitution of subjects. Further by the in-
 corporation of dead typhoid bacilli into an ob-
 served a production of agglutinating substances
 consequently attention is focused on the first ty-
 phoid localizations upon the production of agglu-
 tins. At moments of the bactericidal power of
 the blood are then neglected, and it is estab-
 lished that hemagglutination of typhoid bacilli
 reproduce moderately severe constitutional distur-

hence re incorporated, inoculation is followed first by a negative phase in which the bactericidal power of the blood is reduced, and then by a positive phase in which the bactericidal power may be increased as much as one thousand fold further than when doses which produce very severe constitutional disturbance are employed, the negative phase is protracted, in some cases perhaps indefinitely and lastly that when doses which produce only trifling constitutional disturbances are employed, a positive phase is obtained without the intervention of any negative phase and the bactericidal power of the blood is very considerably increased after an interval of twenty-four hours.

When the patient is infected the dose should stand in inverse relation to the volume of the infection.

Then follow principles founded upon a more detailed study of the changes produced in the blood by inoculation of vaccines *in vivo* and *in vitro*.

1. When vaccines in appropriate doses are added to the blood, whether *in vivo* or *in vitro* instantaneous epiphyllactic response is evoked, and the maximal response may be expected after only a very short delay.

2. The epiphyllactic response in question consists in an extension of opsonic and bactericidal elements from the leucocytes. It is mainly by this ectocytic chemical action, and only to an insignificant extent by phagocytosis and internal digestion, that the bactericidal action of the leucocytes is exerted.

3. The antibacterial substances here in question are polytropic; in other words, they operate not only upon homologous but also upon quite unrelated species of bacteria.

4. When the effective dose of vaccine for intravenous application has been ascertained, this method of administration, because of its certainty and rapidity of action, must be preferred to subcutaneous inoculation.

5. In septicæmia and other heavy bacterial infections the leucocytes lose their power of responding to vaccines. In such cases it is essential before inoculating to satisfy one's self that the blood still retains its power of epiphyllactic response.

6. When by reason of the poisoning of leucocytes, active immunisation by means of vaccines is ruled out, the method of immuno-transfusion should be resorted to; in other words, healthy human blood which has made proper epiphyllactic response should be incorporated.

These data were obtained by adding measured quantities of vaccines or as the case may be living bacteria, to the blood as a whole or its separate elements.

The author then considers in detail the nature of epiphyllactic response. The epiphyllactic response can be evoked in the blood by vaccines; it can be evoked both *in vitro* and *in vivo*; it is characterized by sudden increase in the bactericidal and opsonic power of the serum and this increase is the result of sudden evacuation of polytropic bactericidins and opsonins from the leucocytes. When normal blood

is vaccinated *in vitro* with dead bacteria and then tested with living bacteria and also when blood is tested which has been acted upon by antigens *in vivo*, the event will depend upon the total of antigen which has been brought into operation in the vaccinating procedure of inoculation on the one hand, and the assaying procedure on the other.

The experiments described brought into prominence the fact that in immunisation quantitative considerations dominate the situation. When we want to evoke immunising response in the blood we must employ one particular range of doses and when we want to ascertain what has been achieved we must again employ a particular range of doses.

MORRIS H. KARY, M.D.

LeCahé, J. A Vascular Crisis Produced by Constriction of an Extremity (Crisse vasculo-sanguine par ligature d'un membre) *Presse Méd.* Par. 9. 3. xxxi. 78.

In previous experimental work the author demonstrated that constriction of an extremity produces very definite modifications in the vascular system which are analogous to those produced in colloidal or anaphylactic shock. These changes consist of decrease in the systolic blood pressure, a positive oculo-cardiac reflex slowing of the pulse, an increase in the coagulation time, a decrease in the number of erythrocytes and leucocytes, and inversion of the leucocytic differential count. The same findings occur in asthma, urticaria, angoneurotic oedema and alimentary naphylaxis.

The author believes that such constriction of an extremity may be used as a prophylactic measure to combat anaphylactic shock—in other words, as a method of desensitization. In clinical cases it has prevented attacks of asthma, urticarial attacks, and anaphylactic shock. It stands upon the injection of antitoxic and a typhthenteric serum and neo-salvarsan. It is believed that the vascular changes so produced occur by reflex stimulation of the vagus which results in a reflex slowing of the heart and persistence of the oculo-cardiac reflex. Vasodilation occurs within the viscera while the peripheral capillaries become constricted. The latter fact probably explains the leucopenia. LOYAL E. DAVIS, M.D.

Mino, P. Research on Variation in Blood Groups (Ricerche sulla modificabilità dei gruppi sanguigni) *Riforma Med.* 9. 3. xxxi. 75.

The phenomenon of isoagglutination of human blood has rendered possible the differentiation of four different qualities of blood. Classification in a given group is racial and individual characteristic which is constant through life and transmitted by heredity.

A short time ago Eden claimed that he had been able to cause change in isoagglutination by the administration of certain chemical substances. Mino repeated Eden's experiments on thirty persons but found no modification in the blood group in any case.

R. A. BERRY.

Leebron J. D. A Preliminary Report on Blood Transfusion in Malnutrition and Infantile Atrophy. *A. Arch. Int. Med.* 1913, 19, 3, 398.

In cases of malnutrition and infantile atrophy which do not respond to pediatric measures or fail to make any progress transfusion may give an early favorable outcome. The indications for transfusion are: (1) improper assimilation of food resulting in atrophy and protracted loss of weight; (2) secondary anemia from any cause resulting in malnutrition; (3) circulatory depletion from such conditions as acute gastro-intestinal distention, biliary colic with the associated signs of collapse; (4) cases of apparent exhaustion with coldness of the extremities, cyanosis of the skin, very feeble heart sounds, and a thready pulse, and in which a definite diagnosis cannot be established. If there is no anemia, transfusion is of little value.

Death may result from hypertransfusion or too rapid introduction of the blood. It is better to give small amounts, repeated: ten drops at two weeks, than to give a large amount at the first transfusion. The author considers the limit of safety to be 10 c.c. to the pound of body weight.

In selecting donors the following conditions are essential: (1) a negative Wassermann; (2) satisfactory blood count; (3) compatibility of the donor's and recipient's blood. The third test should never be omitted. Pemberton states that infants develop their own group after 4 weeks. In the cases of extremely ill patients and when the type reading is doubtful, a crossed hemolysis test should be made.

The indirect method using citrated blood or the direct method using whole blood with the syringe-cannula technique may be employed. The superior longitudinal sinus seems to be the simplest route for transfusion in infants when the anterior fontanelle is open. The basilic, cephalic, or the internal saphenous vein may be used. The blood should be administered very slowly. The author allows forty to sixty seconds for each cubic centimeter of blood.

Meleny states that repeated transfusions increase the likelihood of reaction. In dehydrated cases transfusion seems more permanently beneficial than intraperitoneal saline injections. Ashby (tributes the favorable results of transfusion to stimulation of the bone marrow and the functioning of the transfused corpuscles).

The author's cases showed improvement in health with disappearance of the restlessness and anuria and improvement in the general nutrition, tolerance of food, and lessened tendency to subnormal temperature. The hemoglobin increased 50 per cent with each transfusion and the red blood cells increased as much as two million.

Robertson, Brown, and Simpson report a mortality of 45 per cent in eighty-seven cases of marasmus treated by transfusion, and a mortality of 57 per cent in another series of cases treated without and

with transfusion. Of the patients with collapse 43 per cent made a complete recovery. In the second series of cases 83 per cent of the moribund patients died. WALTER C. ROBERT, M.D.

LYMPH VESSELS AND GLANDS

Magnus, G. The Demonstration of the Lymph Radicles in Human and Animal Tissues. (*Die Darstellung der Lymphradikeln in menschlichen und tierischen Geweben*). *Deutsche Zeits. f. Chir.* 9, 1913, 46.

Magnus worked out a special procedure for the filling of the lymph vessels with gas, for the demonstration of the smallest beginnings of the lymph vessel system and the source of its roots. Hydrogen peroxide liberates oxygen as soon as it comes into contact with lymph but not when it comes into contact with the tissues. The oxygen accumulating in the lymph vessels renders them visible.

Hydrogen peroxide may be brought into contact with the lymph channels by direct penetration through the serous membranes, the mucosal oxygen then escaping in retrograde direction through the stomata. It may penetrate also by diffusion through the mucous membranes but as these membranes have no stomata and are impermeable to gas, the oxygen cannot escape in a backward direction. In tissues which are impermeable to hydrogen peroxide, it must be injected under the surface with a syringe. The examination is made of the specimen in its natural state and with a strong light and a binocular microscope.

In contrast to the blood vessels, the lymph tracts show no constant increase in their caliber but rather varying width, which is especially prominent when there is simultaneous filling of the blood vessels. In the peritoneum they are branched and net-like. In the presence of an inflammation they are especially distinct. The stomata, on the other hand, are constantly large. They represent the beginnings of the lymph tracts from the serous cavities. With this method it is possible also to observe the communication between the peritoneum and pleura. Pictures of other portions of the peritoneum show parallel lymph vessels, the arrangement of which is dependent on the structure of the tissue. In the colon, network of lymphatics surrounds the crypts.

The papilla of the small intestine contains central lymph vessel surrounded by delicate blood vessels. The subcutaneous tissue shows wide, irregular lymph spaces, of which the connective tissue to a certain extent represents the covering. The author discusses also a few pictures of the cornea.

In the domain of pathology the use of the method goes in a special field, proves to be hydrothorax, which possibly produces the bone cysts secondarily. In contrast to a hernial sac, the lymph vessels in the hydrocele membrane do not fill up when the fluid is dropped from them because, as there are no stomata, the current from within is arrested; the wall of the

conditions are similar in pentoneal tuberculosis. The fact that the synovial cavities of the joints and tendon sheaths are without stomata explains why they are not involved in generalized oedema.

Konson (2)

Sistrunk, W. E. The Results Obtained in Elephantiasis Through the Kondoleon Operation. *Minnesota Med* 9 3, 74, 75

Sistrunk reports the end results of the Kondoleon operation in forty cases of elephantiasis. He believes this operation is a definite means of controlling the disease, although it is not always possible to restore the limb to normal. There seem to be four types of the disease: (1) lymphatic or venous obstruction usually followed by lymphodema, the elephantiasis probably being caused by invasion of the tissues by streptococci; (2) definite infection through an open wound; (3) injury to the limb and probably phlebitis preceding the disease; and (4) cases in which the etiological factor is not apparent.

All of the author's patients had had lymphodema before the elephantiasis. If lymphodema is not controlled it slowly increases, and in certain cases, probably as the result of infection, there is tremendous increase in the fibrous tissue elements of the skin, subcutaneous tissue, aponeurosis, and superficial lymphatics, leading gradually to elephantiasis. The subjects are prone to recurring attacks of erysipelas, and each of these attacks tends further to increase the difficulty in drainage. Emphasis is placed on the fact that if the patient is put to bed with the limb elevated and firmly bandaged for ten days or longer, the size of the limb may decrease considerably and the tissues may become softer. It will then be easier to determine the amount of skin which may be sacrificed without preventing satisfactory closure of the skin edges. The vascularity of the parts will also be diminished. If there is low-grade streptococcal infection in the tissues, such pre-operative treatment gives it a chance to subside.

Elephantiasis involves only the superficial tissues. Even in advanced cases the tissues lying beneath the aponeurosis are normal. Because of this fact Kondoleon conceived the idea of connecting the deep and superficial lymphatics by the removal of large amount of aponeurosis, the skin being allowed to drop down on the muscles. New lymphatics and blood vessels then form and connect the two circulations, the deep circulation thus draining the stagnant lymph from the superficial circulation. The technique of the operation as performed by Sistrunk is as follows:

A long modified elliptical incision including the skin to be sacrificed is made on one side of the af-

fected limb. On the outer aspect of the leg this incision extends from the crest of the ilium to a point a little below the external malleolus of the fibula. In order to facilitate wide removal of the subcutaneous fat, the skin is reflected on each side of the incision for a distance of about 3.75 cm. The skin is then retracted and underneath each of the edges

long incision is made through the oedematous subcutaneous fat down to and including the aponeurosis. These incisions are made parallel to the original skin incision and are connected at their upper ends by transverse incision. The freed tissue is left attached to the underlying muscle by the aponeurosis. By traction on the freed tissue the aponeurosis is easily dissected from the muscle and removed in one long piece containing the skin, oedematous fat, and aponeurosis. Bleeding vessels are temporarily controlled by hemostats. After removal of the tissues these forceps are taken off, surprisingly few of the vessels needing ligation. The wound is closed with interrupted silk or gut sutures, without drainage. It is usually necessary to perform a similar operation on the opposite side of the limb. The incision for the second operation extends from the extreme upper portion of the inner surf of the thigh down to a point a little below the internal malleolus of the tibia.

If good results are not obtained by the first operation Sistrunk believes that much is to be gained by the continued removal, if necessary, of thickened and deformed areas. These repeated incisions remove much diseased tissue and allow the formation of new blood vessels and lymphatics which assist in draining the affected limb.

Because of the considerable shock which follows operation in extensive cases it is advisable to operate on one side of the limb only. To diminish shock the patient is given 1/6 gr. of morphine before operation, and after operation is given treatment for shock.

The patient should bandage the limb for an indefinite period after operation. If the limb swells considerably in spite of bandaging, he should go to bed, elevate the limb, and keep it firmly bandaged.

If increasing attacks of erysipelas develop after operation, streptococcal vaccine should be given over long period.

Sistrunk believes the failures of this operation are due to the fact that the surgeon did not observe the principles outlined. The patient should clearly understand that the operation is being done to control disease which if left untreated, will grow progressively worse and that afterward it will be necessary to keep the leg bandaged for an indefinite period.

Of Sistrunk forty patients, thirty obtained good results and the rest were benefited.

GYNECOLOGY

UTERUS

Hirst J C and Maxon C: The Palliative and Operative Treatment of Prolapse of the Uterus
Am J Obst & Gynec 93 3

For several years the authors have not regarded diabetes as a contra indication to operation. In any case of prolapse the bulk of the discomfort is due to two factors, the protrusion of the cystocele and the associated bulk and displacement of the uterus. If these can be corrected the patient will be made comfortable. Therefore in cases in which the cervix was not too badly diseased and any prolonged operation was inadvisable the authors have done an interposition operation under local anesthesia. This can be performed painlessly and quickly and at once corrects the cystocele and the retroversion. Nothing is done to the cervix or perineum. The only pain is felt when the uterus is pulled down for the placing of the suture and is negligible. The anesthetic used is a 5 per cent novocaine solution with drops of 1,000 deminon to each ounce. This is infiltrated thoroughly in the space between the bladder and the uterus. The peritoneum when exposed, is infiltrated separately.

The palliative treatment is used only for patients who refuse to consider any form of operation, and yet demand some relief from their constant discomfort, and for those whose age precludes the possibility of operation. Before any form of surgery can be employed ulcerated areas must be healed, proctitis consuming from 1 to four weeks. Rest in bed, the cooperation of the patient, normal salt solution douches twice daily and painting of the ulcerated surface with nitrate of silver solution every forty eight hours or all that is necessary. The patient should be told the nature of her condition so that she will be prepared for the time required for relief.

Occasionally the prolapsed mass is so large and edematous that it cannot be easily replaced into the vagina—the so called irreducible prolapse. In such cases the patient is placed in the knee chest position and the mass is surrounded by hot towels for ten to fifteen minutes. It is then possible by process of taxis, while the patient is still in the knee chest position, to replace the uterus easily.

Operative treatment should always be recommended unless it is contra indicated by the patient's age or by disease.

It is a grave mistake to perform abdominal or vaginal hysterectomy for prolapse unless the uterus is so diseased as to make its removal imperative. If hysterectomy is necessary however it must be followed by as careful and extensive plastic work on the anterior and posterior vaginal

walls as if the uterus still remained. The uterus is the best possible support for the retention of the protruding cystocele; no other structure, neither the broad ligaments nor the vaginal fascia, will satisfactorily take its place.

A properly performed plastic operation in no way militates against subsequent childbirth. Recurrence need not be feared if the patient is given proper care in her confinement.

The interposition operation described varies from that of Watkins in that the right vaginal lumen is caught in back and near the urethra with a needle armed with No. 3 chromic catgut. The needle is passed through the anterior wall of the uterus about 1/2 in. below the tubal insertion and then through the fascia on the opposite side. This does away with the extreme tension of the uterus caused by the typical Watkins operation. When the stitches are tied, the uterus is lifted high up behind the symphysis, and in this manner bulging of the uterus and anterior wall, not uncommon cause of failure in the Watkins operation, is entirely prevented. Three or four similar stitches are then taken, each a little lower than the one preceding, and are left untied.

If the patient is of child bearing age the lumen is caught about one-third of the distance from the urethra to the cervix, and the needle is passed through the anterior wall at the point where the peritoneum is cut and through the fascia of the opposite side. A second stitch is placed below the first. The uterus is then left as an intraperitoneal organ and the canal through which the bladder had prolapsed is closed.

Of many hundreds of operations of this type performed in the past twenty years the authors know of only six which failed. These are chiefly personal failures. The most difficult cases of prolapse to cure are the recurrences following ill advised hysterectomy.

E. L. CORVET, M.D.

Kruse, I: Menstruation—An Inquiry into Its Etiology
Am J Obst & Gynec 93 185

At the present time Fraenkel's theory that the corpus luteum is the responsible factor in the causation of menstruation, is the theory most generally accepted.

Against this theory the author cites briefly a very instructive case which was recently studied in the Gynecological Department of the Mount Sinai Hospital.

The first case is that of a woman 3 years old who was admitted to the hospital October 9. Menstruation began at 12 years and thereafter occurred irregularly at intervals of five to eight weeks. The periods lasted from five to eleven days and were very profuse. During eleven years of married life

the patient had given birth to five children, the last one 10 years before her admission to the hospital. One and a half years ago following a period of menorrhoea of six months she began to bleed continuously. After two months she was cured. She then had a period of amenorrhoea of seven months duration succeeded by continuous bleeding lasting three months and another period of amenorrhoea lasting six months followed by menorrhoea persisting for four months. She was then admitted to the hospital.

Except for a moderate cysto-rectocele and a slightly lacerated cervix, the physical examination was negative. A hysterectomy and a bilateral salpingo-oophorectomy were performed. The uterus was normal in size but the endometrium was hyperplastic and adenomatous. The ovaries were enlarged to twice their normal size and had a thickened tunica albuginea. Sections showed the entire circumference of the nest to be studded with small cysts 1-5 mm in diameter. Careful examination failed to reveal any corpora lutea.

The second patient was admitted to the hospital April 4, 1921. Her family and past history were negative. Menstruation began at 13 years appeared regularly every four weeks, lasted from four to six days, and was very profuse. During the past 10 years it occurred every 1 to 3 weeks and had become much more profuse. Physical examination revealed uterus that was slightly enlarged and left cystic ovary about the size of a plum. On April 28, 1921, left salpingo-oophorectomy and partial resection of the other ovary were performed. The pathological anatomical findings in the ovaries are similar to those of the first case. No corpora lutea could be found. EDWARD L. CORNELL, M.D.

Blacker, G. The Treatment of Menorrhagia by Radium. *Lancet* 93 col. 4.

Radium has now been used in a sufficient number of cases of menorrhagia to warrant conclusions as to the class of cases suitable for such treatment and as to the results. Three types of cases are commonly treated: (1) haemorrhage at the menopause; (2) haemorrhage due to small fibroids; and (3) haemorrhage in young women with no signs of general or local disease.

In cases of haemorrhage at the time of the menopause radium is certain in its results whatever the cause of the bleeding. In cases of fibroids its use should be limited to tumors not larger than the uterus at the fifth month of pregnancy which are not complicated by disease of the appendix, do not cause pressure, and do not markedly project into the interior of the uterus. It should not be employed for submucous tumors because of the danger of infection and sloughing of the growth. Severe haemorrhage in young women without general or local disease should be treated with radium in suitable doses. Temporary or complete amenorrhoea may be produced. If the haemorrhage returns, the procedure may be repeated.

The technique consists of careful examination, exploratory curettage to obtain scrapings for microscopic examination, the introduction of the tube of radium to the fundus of the uterus, and packing of the cervical canal and vagina with gauze. The screen should be sufficient to cut off all beta and softer gamma rays. Two millimeters of lead and 3.0 mm. of rubber are employed in emanation tubes, and 1.0 mm. of platinum and 2 mm. of rubber for radium element.

The average dose in the treatment of haemorrhage of the menopause is from 1000 to 2,400 mc hrs. 1 or fibroids a repetition of this dose may be necessary. In the cases of young women the amount should be smaller if it is desired to produce only a partial or temporary menorrhoea. The term milligram hours provides fair but not accurate estimate of dosage.

Radium should never be introduced into the uterus when there are signs of inflammation of the genital tract but in carefully selected cases its application is free from danger.

Complete amenorrhoea may follow the treatment immediately. In these cases one or two excessive losses occur before complete amenorrhoea is obtained. Minor symptoms of the menopause such as flushing usually follow the complete cessation of menstruation. Not infrequently excessive bleeding occurs immediately after the radium treatment. This is attributed to destruction of the graafian follicles in the ovaries. It has been suggested that carcinoma of the body of the uterus may develop years after the use of radium but large number of observations would be necessary to establish this fact.

Of seventy-seven patients treated by the author nine cannot be traced. Of the remaining sixty-eight thirty-four were treated for haemorrhage at the menopause, twenty-three for fibroids, and eleven for simple haemorrhage. The average dose was from 1,000 to 2,400 mc hrs. In thirty-three of the thirty-four cases treated for haemorrhage at the menopause complete amenorrhoea resulted. In fifteen, it began immediately in eleven after one period and in seven after two or more periods. In the twenty-three cases of fibroids, the average dose was from 500 to 3,000 mc hrs. In sixteen cases complete amenorrhoea followed the treatment; in ten, without any further bleeding; in three, after one period and in three after two or more periods. In two cases a second application was necessary. In five cases the treatment was unsuccessful or only partially successful. In six of the eleven cases treated for simple haemorrhage complete amenorrhoea resulted after one or more periods. The dose varied from 600 to 3,800 mc hrs. the average being from 1,000 to 2,400 mc hrs. In three cases the excessive loss at the periods was controlled. In two cases, hysterectomy was performed.

Amenorrhoea following the application of radium is due to the effect of the radium on the graafian follicles of the ovaries. There is also some local destructive effect on the mucosa of the uterus. Recur-

rence of the periods is associated with the maturing of fresh graafian follicles. The shrinkage of fibroids is due to the onset of the menopause rather than the direct effect of the radium upon the tumor. In the cases of young women who have been treated the radium pregnancy may occur when the periods return to normal. ALONSO J. LARAY, M.D.

Kosner, J. B. Radiotherapy or Surgical Treatment in Fibrosarcoma of the Uterus? (Radiothérapie des fibrosarcomes de l'utérus ou traitement chirurgical?) *Clin. Chir.* 92, 1, 35.

To supplant surgical interference any form of non-operative treatment must give better results and be simpler in execution and give results as good. The author objects to the use of radiotherapy for fibrosarcoma of the uterus because (1) it destroys the physiological function of the ovaries, (2) the uterus is sacrificed, (3) it institutes a radical form of therapy for a pathologic condition which in the majority of cases can not be accurately diagnosed before operation, (4) it may produce necrosis and gangrene, (5) malignant degeneration cannot be excluded, (6) it is contra-indicated by inflammation of the adnexa. Uterine hemorrhage occurring in the climacteric often masks the presence of a well-developed carcinoma. Radium or X-ray therapy should never be employed for the relief of such hemorrhage unless the absence of carcinoma has been demonstrated by microscopic examination. LLOYD E. D. VIL, M.D.

Schmitt, H. The Treatment of Carcinoma of the Uterus, with Special Reference to Surgery, the X-Ray and Radium. *American Med. J.* 5, 1904, 77.

Curative treatment of carcinoma of the uterus requires the total removal of all neoplastic tissue. Success depends on correct diagnosis and the extent of the lesion. The cases are grouped as:

1. Localized carcinoma: neoplasm confined to the uterus.

2. Borderline carcinoma: neoplasm possibly invading other tissues.

3. Inoperable carcinoma: demonstrated invasion of other tissues.

4. Advanced carcinoma: frozen pelvis, marked cachexia or distant metastases.

5. Complicated carcinoma: associated grave constitutional disease.

Localized carcinoma is treated by hysterectomy. The vaginal route may be employed when indicated. The Wertheim operation, with its operative mortality of 5 per cent, is never used in the clinic. Surgery in borderline cases results in an increasing number of recurrences; higher operative mortality and recurrence. Confidence in surgical treatment can be re-established by operating only when the growth is confined to the uterus.

Groups 3 to 5 contra-indicate operation and unfortunately constitute 80 to 90 per cent of the cases of neoplasms of the uterus entering the clinic.

Of the various methods employed in treating borderline and inoperable cervical carcinoma, radium

and the X-ray have received more attention than any others. The success of radiation therapy depends on delivering to a deep cervical carcinoma sufficient ray to destroy it without permanently traumatizing normal vital tissues. The technique depends on: (1) the intensity of the rays of radium and the X-ray at various distances on physical basis, (2) the erythema dose, and (3) the lethal carcinoma dose. Graphs are given showing the X-ray intensities by centimeters, and of 50 mgm. of radium as well as these are combined, giving the summation intensities, and upon these graphs are superimposed diagrams of cross and sagittal sections of the pelvis in various conditions treated. It is possible by these methods to destroy deep malignancy without causing permanent injury to normal vital tissues.

The subjective relief, the local healing, the five-year relief and the absolute cure should be determined by means of a follow-up system. Tables are given showing the number of patients treated year by year and the outcome. Of 100 patients with cervical carcinoma who were treated from 1914 to 1921, twelve are alive and well today. In fifty-nine cases belonging to Groups 1 and 2, cure was obtained in eleven (18.75 per cent) while in fourteen cases belonging to Groups 3 and 4 a cure was obtained in six (42.85 per cent). The results in advanced and inoperable cases are poor.

Advanced cases must be treated with care as heavy rays may cause fatal toxemia. From 600 to 1,000 mgm. hrs. are given merely for palliation. The author warns against the use of surgical or other measures following fairly successful radiation and against the repetition of the radiation, providing the proper dosage was applied in the initial treatment. From one to eighteen months is required after full radiation dosage for the cells fully to recover from the effect and if the treatment is repeated then that time radiation ulcer or necrosis with irreparable damage may follow.

With regard to pre-operative and postoperative irradiations the author states that if the surgeon is in doubt the dosage should be the same as that which could be given if the uterus had not been removed. This cannot be accomplished without the use of phantoms. The latter are made of bakelite or balls of lead.

The article is summarized as follows:

Cervical carcinoma should be grouped for prognosis and treatment.

1. Careful statistics should be kept to establish the efficacy of the treatment.

2. The following rules are established: (1) Localized carcinoma should be treated by hysterectomy. (2) Borderline and inoperable cases should be treated by combined full dose of radium and X-ray. (3) Advanced and recurrent cases should be treated palliatively with radium and the X-ray.

4. Radiation therapy should not be preceded or followed by operation.

5. Repetition of course of radiation therapy is contra-indicated. ALONSO J. LARAY, M.D.

Mahle, A. E. The Morphological Histology of Adenocarcinoma of the Body of the Uterus in Relation to Longevity: a Study of 186 Cases. *Surg Gynec & Obst* 9 3, xxvii, 385

The author reports 186 cases of carcinoma of the body of the uterus from the May Clinic. An attempt was made to prognosticate the malignancy or the mortality of these cases on the basis of the cellular changes. MacCarthy's standard of cellular differentiation was employed. The tumors were grouped into four types. Grade 4 represented the most malignant type of cell, with practically no differentiation throughout the entire tumor. Grade 1 comprised the early cases in which the carcinoma was extremely small and the cells showed a high degree of cellular differentiation or approximation of the normal type of cell.

The longest duration of symptoms was in cases of Grade 1 and 2, the longest stage duration of symptoms was in the least malignant cases, those of Grade 1, and the shortest stage duration of symptoms in the most malignant cases, those of Grade 4.

All patients with Grade 1 malignancy are still living, while those with Grade 4 malignancy are dead. Seventy-five per cent of the latter died of carcinoma. Of the patients with Grade 2 malignancy 71.76 per cent are still alive, while of those with Grade 3 malignancy only 38.09 per cent are alive. The mortality due to carcinoma in these two groups was 61.06 per cent and 74.9 per cent. The number of patients who are dead as well as the number of deaths due to malignancy increased directly with the degree of malignancy.

Abdominal hysterectomy was performed on 36 (73 per cent) of the 186 patients, and vaginal hysterectomy on forty-five (24.19 per cent). The percentage of postoperative good results in patients still living is slightly higher among those subjected to abdominal hysterectomy while the incidence of recurrence is slightly higher in those subjected to vaginal hysterectomy.

The author draws the following conclusions:

The more active the carcinoma, the shorter the clinical symptoms.

The shape of the lesion appears to be related to the degree of cellular differentiation, the more malignant the carcinoma, the less liable it is to assume papillary form.

A carcinoma of a high grade of malignancy grows larger and invades more extensively in given length of time than one of a lower degree of malignancy. Lymphocytic reaction appears more marked in the groups which show higher degree of malignancy.

The clinical diagnosis of carcinoma of the body of the uterus is possible before curettage or hysterectomy in 40 per cent of all cases.

A series of adenocarcinoma of the uterus can be so classified according to the degree of malignancy that the ultimate postoperative results will vary in direct proportion to the mortality of each group.

ADNEAL AND PERI-UTERINE CONDITIONS

Gesst, S. H., and Harris, W. Experimental Investigation of the Value of the Various Commercial Ovarian Extracts. *Endocrinology* 9 3

4

One cubic centum of each preparation of corpus luteum, ovarian substance, and ovarian vesicles was injected into groups of castrated rabbits every third day. From fourteen to eighty-five days later the animals were killed and the pelvic organs, thyroid, adrenals, pituitary gland, and mammary glands were removed.

In all cases the uterus showed atrophy. This was less marked in the animals killed early than in those killed later. The mammary glands also were atrophied. The pituitary gland did not show much change. The thyroid of the injected animals appeared somewhat enlarged. The adrenals showed areas of necrosis and fatty changes.

In the injected animals there seemed to be a distinct loss in weight as compared with the controls. This may have been due to an increase in the metabolic rate resulting from changes in the thyroid gland.

It would appear therefore that the injection of the several commercial preparations is unable to prevent the atrophy following castration in rabbits. The cervix is not involved in this process.

H. W. FARR, M.D.

Wells, H. A. A Contribution to the Study of the Effects of Radium upon Rabbit Ovaries. *Surg Gynec & Obst* 9 3, xxvii, 373

It is quoted as stating that a dosage of 600 mg hrs of radium has no influence upon the small graafian follicles. In the author's investigations he used 600 mg hrs of radium because it is believed by most authorities that this dosage applied in the human uterus will produce permanent amenorrhea, a result generally regarded as due to the destruction of the maturing graafian follicles. As a rule, 50 mgm were used in two 5 mgm tubes, screened in such a manner that only the gamma rays were employed. The tubes were fastened as nearly as could be determined directly over the rabbit's ovary. Fifty milligrams were used for each hour or 100 mgm for six hours.

In nine rabbits the right ovary was removed, the left ovary was exposed to the rays, and the two were then compared microscopically. In seven rabbits the right ovary was rayed and then both ovaries were removed. Finally both ovaries were exposed to radium and the rabbits were bled after an interval of six weeks. In no case was the radium more than 1/4 in from the ovary.

The author describes the structures of the normal rabbit ovary in detail in order to distinguish between normal atresia and degeneration which might be caused by radium. He then gives the detailed histories of eighteen rabbits. The findings are summarized as follows:

1. In none of the ovaries was any change noted in the single row of germinal epithelium after exposure to radium.

2. There was no evidence of obliteration of the uterine cavity.

3. Six ovaries showed no change in the connective tissue cortex but ten showed an increase in the number of cells in this area.

4. There was no evidence to prove that the ovary and maturing graafian follicles had been affected. It is certain that the young and early maturing ovaries were not harmed.

From these investigations the conclusion is drawn that the dosage of 600 mgm hrs of radium has no ultimate detrimental effect upon rabbit ovaries. With regard to clinical cases it may be said that when intra-uterine treatment is administered for menorrhagia for example the result of menorrhagia is due not to the effect of the radium upon the ovarian follicles but to its effect upon the endometrium in which is several times as great. If this theory is correct and several of the best authorities on radium therapy have accepted it much that has been written with regard to the effect of radium must be rewritten and treatment with radium must be revised.

ALFRED J. LARSEN, M.D.

EXTERNAL GENITALIA

Douglas, D. Primary Carcinoma of the Vagina Treated by Hysterovaglectomy. *J. Obst. & Gynec. Brit. Imp.* 9 3 22 38.

Holthorn, E. A Case of Primary Carcinoma of the Vagina. *J. Obst. & Gynec. Brit. Imp.* 9 3 22 40.

Stevens, T. G. Squamous Epithelioma of the Vagina. *J. Obst. & Gynec. Brit. Imp.* 9 3 22 41.

Spencer, H. R. Adenoma of the Vaginal Fornix Mimicking Cancer of the Cervix. *J. Obst. & Gynec. Brit. Imp.* 10 3 22 44.

Primary carcinoma of the vagina is rare. The age at which it occurs is somewhat later than that of malignant growths of the cervix. The irritation of pessaries has been believed to play a part in its development. Its most common site is the posterior wall of the vagina. The forms of growth are described, one beginning as solitary nodules which subsequently break down and form an ulcer and the other an infiltrating form. Douglas patient was a married woman 44 years of age who had borne eight children, the last eight years previously. She had never worn pessaries. The complaint was bleeding on coitus for the past six months and more recently a blood-stained discharge. She had no pain and her general condition was good. Examination revealed a friable plaque like growth occupying

the upper two-thirds of the posterior vaginal wall and extending almost to the posterior lip of the cervix. The growth was oval in shape with its long axis vertical, and appeared to be freely movable. At operation, practically the entire vagina, uterus and the appendages were removed. Recovery was uneventful, and six months after the operation there had been no recurrence. Microscopically the tumor was a typical squamous cell carcinoma.

Holthorn's patient was a woman 40 years old who had had four children and was still menstruating regularly. For the past six months she had had an offensive, watery blood-stained discharge and for the past 10 months good deal of hemorrhage but no pain. Examination revealed a hard, circular, raised and rough friable growth on the upper third of the posterior vaginal wall. The growth seemed to be well localized. Under sternal anesthesia the vagina and the uterus, together with the pelvic cellular tissue and iliac lymphatic glands were removed. Histologically the growth proved to be solid trabecular squamous cell horny cell carcinoma of the vagina. Four months after the operation there were no evidences of recurrence.

Stevens' patient was a woman 53 years old who had had one child and miscarriage and as just entering the menopause. For 10 months there had been bloody discharge. When seen by Stevens the patient complained of pain in the pelvis radiating down the legs and sense of weight and pressure. She had worn pessaries for number of years but not during the past year. Upon examination large circular flat and fairly well localized nodular growth was found on the posterior vaginal wall. At operation the uterus and the upper two-thirds of the vagina were removed. On histologic examination the growth was found to be a typical squamous epithelioma.

Spencer's patient was a woman 54 years old who had had 10 children and one miscarriage had been widow for twenty-five years and had suffered from intermittent hemorrhages for several years. The menopause occurred at an early age. There was no pain. Vaginal examination revealed a bottle growth as large as a large duck egg which nearly filled the vagina. The tumor was regular on the surface and resembled proliferating carcinoma of the cervix. It was easily broken off from the vagina with the fingers and found to arise from the vaginal wall by pedicle to the fornix. The cervix itself was normal. Microscopically the growth proved to be benign adenoma. In spite of this, however, the patient was given further treatment with radium. She was free from symptoms twelve and a half years later. H. W. Fox, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Weitz, W. E., and Allen, R. W. A New Measurement as an Aid in the Diagnosis of Rachitic and Generally Contracted Pelvis. *Am J Obst & Gynec* 9 3 83

In the thorax opinion the measurement of the pelvic height is not only more easily determined but also of greater value than the measurement of the conjugata externa of B. oblique.

The patient is placed preferably on her right side in the exaggerated Sims position. The left leg is flexed about 120 degrees with the body and the patient instructed to relax all the muscles of the leg. One point of the pelvimeter is then placed firmly upon the tuber ischii and held by the left hand of the operator while the fingers of his right hand seek the highest point of the crest of the ilium the other point for the measurement. The tips of the pelvimeter are then depressed to bring them as closely as possible to the bony landmarks. One centimeter is deducted from the reading to allow for the thickness of the overlying tissue.

When the measurement is 20 cm or less thorough internal examination is indicated. In the authors series of twenty five rachitic and generally contracted pelvis, there were two in which the pelvic height was below 9.5 cm. Outlet contraction and funnel pelvis show no definite alteration in this diameter. E. L. Corvetti, M.D.

Oastler, F. R. and Jacobs, H. G. Report of Case of Toxemia of Pregnancy with Acute Yellow Atrophy of the Liver. *Am J Obst & Gynec* 9 3 7

The patient was admitted to the hospital October 19 with the complaint of vomiting, severe headache, dizziness, and pain in the lower part of the abdomen on the left side. She had not menstruated for seven months. For the past six weeks she had noticed that her feet were swollen. The pain in the lower abdomen came on chiefly while she was at rest and radiated to the back and the left iliac region. At the onset the patient fainted. Later she became extremely thirsty and restless and slept very little that night. The next morning, ten hours prior to her admission to the hospital, bleeding from the vagina began and extreme thirst began.

On her admission to the hospital her general condition was very poor. She was cyanotic and gasping for breath, her tongue was dry and furred, and she had violent headache. The temperature was 99 degrees F, the pulse 120 and of poor quality, and respiration 28. There was no jaundice. The general physical examination of the heart and lungs was negative. Abdominal examination revealed con-

siderable general soft distention with marked tenderness in the left lower quadrant. On pelvic examination the external genitalia were found to have purplish hue and there was moderate bleeding from the vagina. The uterus was somewhat enlarged and soft. The cervix was soft and showed bilateral laceration. The cervical ring caused sharp pain in the region of the left broad ligament. No masses were felt in the region of the adnexa but the left side was extremely tender. The blood count showed white cells 28,000, polymorphonuclears 80 per cent, haemoglobin 7 per cent. The blood pressure was 105/70. On the right thigh was a large subcutaneous hemorrhage.

A tentative diagnosis of ruptured ectopic gestation was made and laparotomy performed immediately under gas and oxygen anesthesia. The uterus was found to be enlarged but the tubes and ovaries were entirely normal. There was nothing in the abdomen to account for the localized tenderness and distention. The abdomen was therefore quickly closed.

The next day, October 3, 1919, the patient developed erythema marked jaundice over her entire body. Her temperature was 104 degrees F and her pulse imperceptible. She remained in the state of delirium which set in immediately after the operation. Clinically her condition was more critical than the day previous and the diagnosis of toxemia of pregnancy was made. The prognosis was very grave. The blood pressure was 5/70. The cervix was then dilated and the uterus emptied under gas and oxygen anesthesia, and irrigated with salt solution. The pathologic report confirmed the diagnosis of pregnancy.

Chemical examination of the blood on that day showed urea 50 mgm, uric acid 3.5 mgm, creatinin 5 mgm, sugar 143 mgm, combining power of the blood plasma 40 vol. The icterus index was 187.

As the patient was unable to void catheterization was necessary. 5 cm of dark reddish urine were withdrawn. Examination showed this urine to contain blood, many epithelial cells, numerous hyaline and granular casts, and bile.

The next day the jaundice was less marked and the urine less highly colored. The temperature was 100.5 degrees F and the pulse 100. The patient complained of salty taste in her mouth. There was no vomiting.

Clinically there was evidence of improvement but the laboratory findings showed that since the last examination all of the clinical elements of the blood had increased. Of particular importance as far as the outlook of the case was concerned was the increase in the creatinin content. There were only two findings which suggested the possibility of improvement: (1) the increase in the combining

power of the blood plasma from 40 to 50 volumes, and () a decrease in the literus index from 157 to 100.

On October 16 the general condition was about the same. The temperature had dropped to 38.00 degrees F. but alternate delirium and coma still persisted. Complaint was made of considerable pain over the liver region and there was marked tenderness on palpation over this area. The jaundice was lightly more marked.

On October 19 the general condition as far as could be determined clinically was better. A careful examination of the urine revealed the presence of leucocytes and tyrosin. This, together with the presence of pain and tenderness in the right hypochondrium, vomiting, delirium, drop in uric acid, jaundice and marked retention revealed by the blood examination, suggested to me the diagnosis of pregnancy which the liver destruction was very typical. The extreme rarity of recovery from this condition and the fact that the patient eventually recovered and is still alive makes it still more difficult to establish definitely the underlying pathology in this instance.

The general treatment consisted in the administration of large doses of alkalies by mouth and by rectum, rectal irrigations, and the administration of glucose solution by Murphy drip, and of general sustaining medication on sedatives. When the patient was able to swallow water as pushed to the limit of tolerance. By November 7, ten days after the operation for the removal of the fetus, the patient was out of bed but the jaundice had not entirely disappeared. The temperature and pulse were normal. The urine still contained albumin 2+ but no casts. The total amount of urine passed in twenty-four hours was 1,050 cc. The blood chemistry was normal.

The laboratory findings show strikingly that at the onset there was retention of all the autogenous products. The most marked, as that of the urea, the next most marked, that of uric acid, and least marked, that of creatinin. E. L. CORNELL, M.D.

PETERSON, R. Toxicities of Pregnancy Including Pre-Eclampsia, Eclampsia, and Nephritis. The Indications for and the Methods of Artificial Interruption of Pregnancy. *J. Urol.* 1924, 11, 322, 44.

Nephritis. Acute nephritis is a rare complication of pregnancy. Whatever its cause—exposure to cold, poisoning, or contagious disease—the patient should be treated conservatively in bed and isolated over the acute disease if possible.

If appropriate medical treatment is of no avail however, and the nephritis is becoming progressively worse as shown by increasing albumin and casts in the urine, anasarca, heart involvement, high blood pressure, etc., the uterus must be emptied by the method causing the least shock.

Chronic nephritis. The determining factors to be considered in arriving at a decision for or against the

artificial interruption of pregnancy are the severity of the kidney lesion at the time of the occurrence of pregnancy and the progress of the disease under treatment.

When the organ is tilted over to the period of the child's viability, the pregnancy must be interrupted at the earliest period compatible with safety because the danger of interference with placental circulation resulting in separation of the placenta, fetal death, and grave menace to the life of the mother becomes increasingly greater as term is approached.

Eclampsia. Eclamptic seizures are due to poisoning brought on by the presence of the living fetus upon the uterus. So long as the fetus remains in the uterus, toxins will be formed unless the process can be combated by medical treatment. If the fetus can be removed without too great trauma and the poison eliminated, the patient will recover. If the patient is overwhelmed by the eclamptic poison she will die whether the treatment be medical or operative or both.

Pre-eclampsia. This is a condition in which laboratory and clinical tests show an intoxication which has not yet led to convulsions unless it can be checked.

When, in spite of treatment, the albumin and casts in the urine and the blood urea increase, when the blood pressure rises, and when the anasarca, headache, and other symptoms become more pronounced, the author does not hesitate to empty the uterus and he has never regretted such active treatment.

Methods of artificially interrupting pregnancy in the human. If it is decided to empty the uterus to save the life of the mother before the age of viability of the fetus, the method chosen should be the one which will cause the least shock to the patient.

How condition—broadly poor because of the toxicity brought about or augmented by the pregnancy. Before the second or third month, cervical dilatation and curettage will usually prove satisfactory as the products of conception can be removed by this method quickly and thoroughly. When the cervix is rigid an anterior hysterotomy should be done instead of prolonging the operation in an attempt to dilate. The author has found that short ether anesthesia is well tolerated.

It must be borne in mind that any operative procedures upon a patient profoundly poisoned as the result of non-elimination may be followed by sepsis. Therefore more than ordinary care must be taken to obtain asepsis.

In the second half of pregnancy the type of operation selected for emptying the uterus will depend upon a number of factors: maternal and fetal.

In the case of multipara, thus an easily dilatable cervix, manual dilatation terminated by cranioclast or forceps may be indicated. In the case of primipara, better results will follow abdominal or vaginal hysterotomy. It must be borne in mind that the toxin is apt to have a serious effect on the fetus, and that therefore prolonged manipulation from below

may cause its death when it might be saved by extraction by the abdominal route.

In the presence of convulsions, abdominal cesarean section is the operation of choice unless the birth canal is easily dilatable and extraction is easy. It is the only procedure if eclampsia is complicated by contracted pelvis. If it were performed more often, before or soon after the first eclamptic convulsion, it would save a greater number of mothers and babies than any other method.

In conclusion the author states that each case must be judged by itself, consideration being taken of the degree of intoxication, the condition of the birth canal, and the size and condition of the child. If the child can be saved by a certain type of operation without prejudice to the mother, this should be the operation of choice. CARL H. DAVIS, M.D.

LABOR AND ITS COMPLICATIONS

HARRIS, J. A. Functional Dystocia in Normal Pelvis: Recognition and Management. *Am J Obst & Gynec* 9:3 246

As it is impossible to define prolonged labor in units of time in an individual confinement, it is better to pronounce a labor prolonged or delayed under the following conditions:

When there is primary inertia with ruptured membranes:

1. When, despite good contractions, there is no advance in the cervical dilatation or progress of the presenting part.

2. When there is advance with increasing malposition.

3. When, due to the causes cited, increasing tonic spasm of the uterus develops with continued ascent of Bandl's contraction ring.

4. When the mother or the child shows signs of exhaustion.

If there are severe pains, the rapidity of the cervix in the first stage, the use of morphine and scopolamine is frequently efficacious in controlling the mother's suffering and preventing nervous exhaustion while the cervix dilates. A constant observation in the use of scopolamine for a slight sleep, as the slight tensile effort required to effect smooth and rapid dilatation of the cervix. When the membranes are intact and dilatation is slow, freeing of the membranes for several inches around the os will keep the case under control much better than their rupture and should be given first, but in the cases of multiparae simple rupture, admitting three or four fingers and good effacement of the cervix will often be followed by prompt delivery.

When there is primary inertia with ruptured membranes and the cervix will admit only one or two fingers and is not effaced, packing of the cervix and upper vagina with gauze is usually of greater aid in softening the cervix and inducing good pains than the use of drugs.

Manual dilatation is safely effected only in a cervix which is fairly well effaced, and even under

these circumstances there is danger of tearing and hemorrhage unless merely a remaining rim must be reamed out.

If delivery is imperative and the cervix is effaced and dilated to admit three or four fingers but still too rigid to dilate manually without tearing, snipping with the scissors on either side is of great aid before the use of forceps, and is especially to be thought of when the aftercoming head catches in the cervix.

When dilatation of the lower soft tissue funnel, the levator ani margin, and the urogenital septum becomes necessary, the author is inclined to prefer manual dilatation with plenty of lubricant and the repair of such small lacerations as may be superimposed. Episiotomy he restricts to cases in which tearing into the rectal sphincter is imminent, or the child must be instantly delivered.

Pituitrin should not be employed before delivery, but is frequently indicated for the control of postpartum bleeding before the ergot can exert its full effect.

When the child's head is at or above the brim, the author prefers erosion to the use of high forceps. Potter has laid emphasis on the combined advantages of certain manoeuvres in podalic version and breech extractions; the details are not new, but the combination results in an excellent delivery. Version competes with high and hard median forceps, but the author is not yet prepared to admit that it competes with low median forceps or in any way with spontaneous delivery.

The most frequent and most commonly unrecognized cause of delayed labor in cases of normal pelvis is failure of rotation with permanently posterior position of the occiput.

Of 8,360 cases of recognized posterior occiput only 433 (5 per cent) required artificial delivery.

In delay due to posterior occiput interference is warranted when there is no advance despite good contractions, and when, with advancement, there is an increasing extension of the head. In such cases the methods of choice are erosion with the head above the midpelvis or manual rotation and forceps extraction with the head below the midpelvis. Molding of the head through the brim is not a contra-indication to erosion if the terms relax sufficiently under complete anesthesia to admit readily the passage of the hand and wrist through the retraction ring.

Complete Scarsion rotation of the posterior occiput with the forceps is a dangerous procedure in most hands.

There is undoubtedly a definite field for cesarean section in cases in which the baby is over-sized, in cases of prolapse of the cord and long, poor dilatation of the cervix, in cases of non-engagement in which there is a tonic uterus and a high baby, and in cases in which a previous stillbirth resulted from dystocia although the relationship of the child and pelvis was considered normal.

E. L. CORNELL, M.D.

Harper, P. T. *Clinical Aspects of Blood Loss in Labor*. *Am J Obst & Gynec* 1913 33

The practice of measuring physiological loss in ounces has little to commend it. If the limit is low, for instance from 4 to 6 oz. every large woman delivered of a 9- or 10-lb. child and losing from 8 to 10 oz. of blood within a few minutes would suffer from postpartum hemorrhage. As a matter of fact, however, the blood lost represents efficiency on the part of the uterus in establishing hemostasis at a large placental site. On the other hand, if the limit is placed a few ounces higher, a slender undernourished, and anemic woman losing 6 to 8 oz. could be considered as having no more than physiological loss when, in terms of her ability to stand it, she has had a mild hemorrhage.

With the exception of minor perineal injuries, postpartum hemorrhage is the most frequent complication of parturition. The readiness with which this view will be accepted depends altogether upon the reader's conception of physiological blood loss. In the author's opinion, physiological blood loss is needed and hemorrhage obtains when any unnecessary loss is sustained regardless of amount.

The hemorrhage is external when blood flows from the uterus or leaves it in clots, and concealed when there is a progressive increase in the size of the postpartum uterus. The one indicates an unphysiological blood loss as definitely as the other.

Because so many cases of hemorrhage are due to muscular insufficiency and because the latter condition is so often preventable, the prophylactic treatment outweighs the curative treatment.

Prevention should be begun hours before a possible blood loss occurs. This should consist in (1) saving the patient's general strength by keeping her in bed while active labor is in progress (2) preventing premature and ineffectual flutters at bearing down (3) artificial rupture of the membranes when dilatation is quite complete and (4) since it is impossible because the bag of waters does not rupture spontaneously (5) limiting the time that frequent propulsive second stage contractions are allowed to continue with little or no promise of eventual spontaneous delivery (6) terminating labor at a time when efficient contractions can be supplemented by traction from below and (7) removing the contents of distended bladder or rectum which may reflexly inhibit satisfactory uterine action at the time it is needed. These measures are urged in order that at the end of the third stage the uterus will not be exhausted.

Unquestionably the conclusion could be more satisfactory in many cases if expulsive efforts were supplemented by judicious efforts of traction as soon as it is evident that the uterus has done its best. A well-defined caput and satisfactory molding show that the uterus has been efficient, while failure of progressive dilation proves it unequal to the effort necessary for delivery. Conservation calls for the preservation of all possible muscular energy for the postpartum period, and little if any will be

available if the uterus is allowed to continue its ineffectual expulsive efforts too long.

The extent to which the postpartum uterus is muscularly insufficient, it will fail to respond to stimulation. Further it must be borne in mind that stimulation of tired uterus does no more than excite it to increased flutters which it cannot maintain, and that when the latter run off, the degree of insufficiency is increased. Pituitary extract and ergot drawn from, rather than added to the store of muscular energy. They are valuable aids in the treatment of hemorrhage but they may not be depended upon as curals.

When efforts of stimulation have failed to excite the uterus to activity it is apparent that the organ is unable to respond and that further administration of drugs or the application of measures depending upon latent muscular efficiency to accomplish results are contra-indicated. Under such circumstances firm intra uterine tamponade is necessary.

E. L. CORVILL, M.D.

NEWBORN

Still, G. F. *Attacks of Arrested Respiration in the Newborn*. *Lancet* 1913 43

The author describes typical case as follows:

The subject is an infant a few hours or weeks old who has given no cause for anxiety. The labor period was normal, there was no asphyxia at birth, and placenta is being progressing well when the child is found suddenly colored or pale, lying motionless, ceased to breathe. Artificial respiration starts breathing again, and by the time the physician arrives the infant is lying placidly shows good color and is breathing normally. In a few hours, however it is again found in the abnormal condition described and only by prompt artificial respiration is revived again. This is repeated for day or two, and then probably in one of the attacks breathing can not be restored and the infant dies.

In the six cases observed by Still the age at which the attacks began was respectively about 16 hours, 26½ hours, 3 days, 4 weeks, and 4 weeks and 3 days.

Infants with these attacks are not necessarily feeble or poorly nourished. The infant which had them first when it was 26½ hours old weighed 9 lbs. at birth and the infant which had them first when 4 weeks and 3 days old weighed only 5½ lbs. at birth and 8 lbs. when the attacks began. Asphyxia at birth is certainly not necessary antecedent.

The prognosis seems to be very unfavorable, only one of the author's five patients recovered. The infant's appearance in the intervals between the attacks is deceptive. The sudden and absolutely silent onset of the attacks must be borne in mind. It is essential that the infant be watched closely night and day until the attacks have been entirely absent for some time. At any moment, artificial respiration may be the only hope of saving life, and the nurse or mother must be instructed accordingly.

FRANK L. CORVILL, M.D.

GENITO-URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Decker, W. H. Syphilis of the Adrenals. *Am J Syphilis*, 1923, vii, 2

Luetic lesions of the adrenals in congenital syphilis are not rare and in recent years have been frequently found in autopsy in cases of acquired syphilis. The marked asthenia sometimes observed in the course of syphilis has been attributed to luetic invasion of these glands. It is possible that the benefits derived from the use of adrenalin in the treatment of reactions following the injection of salvarsan indicate the presence of such lesions which are unsuspected.

Syphilis of the adrenals was recognized pathologically especially in hereditary syphilis, before any clinical cases were reported. Lancereaux and Virchow found an increase in the size of the adrenals in this condition. Baerensprung found these structures invaded by masses of nuclei and young connective tissue cells. In 1866, Virchow and Hecker described gummata of these structures. According to Baerensprung and Hecker the suprarenal capsules are considerably swollen, hyperemic, and beset with small white granules or milium spots the size of poppy seeds which traverse the cortical substance in the form of radiating striae. These masses are composed of nuclei and young cells. Ribadeau-Dumas and Pater studied the suprarenals in twenty cases of hereditary syphilis and found them affected relatively frequently. The conditions included simple hyperemia, congestion with infective nodules, sclerosis, atrophic and sometimes cellular changes, simple sclerosis, gummata, and sclerogummatous degeneration. The treponema was very frequently discovered in these structures. Marshall and French state that evidence of inherited syphilis has been found in cases of infantilism, dwarfism, gigantism, myxodema, acromegaly, exophthalmic goiter and Addison disease and cases have been reported in which these conditions were benefited by antibiotic treatment. The adrenals are enlarged also in acquired syphilis of the visceral type.

Another striking characteristic of the adrenals in chronic syphilis is marked lipodema of the cortex which is found in many cases. This may be patchy or involve the entire cortex. Leppmann says that amyloid degeneration of the adrenals is not uncommon. In congenital syphilis involving the parenchyma the spirochaeta pallida is present in large numbers. Eichorst states that at other times tuberculosis or carcinoma in other organs, antecedent syphilis, suppuration, or other wasting discharge may suggest that the adrenal bodies are involved by tuberculosis, carcinoma, gumma, or amyloid degeneration with consequent development of Addison disease. According to Remman, Addison's disease

is usually due to tuberculosis of the adrenal glands, and in rare instances to syphilis, fibrosis, or tumor.

Abstracts are given of the histories of eleven cases showing the Addison syndrome in close relationship to syphilis, but with a decided lack of uniformly favorable results following antibiotic treatment.

C. D. HOMER, M. D.

Ziegler: Experiences in Pneumoroentgenography of the Renal Bed by Rosenstem's Method (Erfahrungen mit der Pneumoroentgenographie des Nierenlagers nach Rosenstem). *Fortschr. d. Geb. d. Röntgenstrahlen*, 9, 2, xxx, 56

In the method described, the point of the needle lies within the fatty capsule between the posterior surface of the kidney and Zuckerkandl's fascia, and the oxygen is allowed to spread only within the fatty capsule. As a rule, 300 to 400 ccm will be found sufficient. The use of a modified Brauer pneumothorax apparatus is preferable to inflation with a syringe. When the position of the needle is correct, the gas will distribute itself in a median and a lateral direction from the kidney simultaneously.

This procedure makes it possible to see the kidney as easily as the heart. Its entire surface may be studied, and on oblique transillumination any changes in its anterior or posterior surface are clearly revealed. The stereoscopic exposure affords a wonderful view of the relation of the kidney to its surroundings. In contrast to pyelography the method gives information regarding the renal parenchyma. The fact that obliteration of the fatty capsule makes it impossible to surround the kidney with gas may be of value in the diagnosis of conditions formerly recognized with difficulty. GRANTMAN (Z)

Neuwirt, K. The Treatment of Reflex Anuria (Ein Beitrag zur Therapie der Reflexanurie). *Ztschr. f. spec. Chir.*, 1922, xl, 75

This article is begun by observations on the innervation of the kidney by the sympathetic and vagus nerves. Only in recent times has any emphasis been laid upon the secretory influence of the nerves upon renal function, an influence demonstrated by the fact that every cell of the renal tubules is surrounded by a delicate network of nerve fibers. The vaso-motor fibers originate from the splanchnic nerve, section is followed by polyuria due to paralysis of the vasoconstrictors, and stimulation results in contraction of the blood vessels and oliguria.

At the present time, the vagus is recognized as a nerve promoting secretion and an antagonist of the splanchnic nerve which inhibits secretion, but the activity of the nervous system is evidently that of a delicate regulator as the denervated or reimplanted kidney continues to function for a long time

The reflex influences which the renal function is subject are numerous. Excretion is decreased by cooling of the abdominalization of the sciatic nerve or ureter. The incision of a tone of the kidney or compression of a ureter and ligation of the pressure of tamponade in the peritoneum of the kidneys after nephrectomy may produce reflex anuria or oliguria on the other side through reflex spasm of the renal arteries. The path of the reflex could be sought in the splanchnic nerve and the testis secreted from on side the other in the lordal segment of the spinal cord.

Newer attempts to determine the effect of the splanchnic nerve upon the renal function in man by anesthetizing its fibers. Theoretically this may be achieved by lumbar anesthesia paravertebral from anesthesia, or placental anesthesia according to the method of Kappeler. Newer attempts the Kappeler method in case of diabetes mellitus and found that the kidney on the side anesthetized excreted one half gram much less than the kidney on the other side.

A reflex anuria ligula is produced by pain of the renal vessels and reflex stimulation of the somatic nerves of the kidney and these impulses are carried only by the splanchnic nerve. If the motor leg and the stimulus conducted in the splanchnic nerve from the kidney must be interrupted by the course of the somatic motor is interrupted by splanchnic anesthesia. Consequently the inhibitory effect upon the renal function must disappear and the kidney on the leg of the somatic following such interruption of the nerve.

The author tested this theory in case of reflex oliguria. 1 minutes after anesthetization of both splanchnic nerves the excretion of a percent of sodium chloride and from the severe colicky pain were greatly relieved and after an additional 15 minutes the pain had ceased entirely. The amount of urine which had been 130 ccm during the previous 14 hours rose to 255 ccm in the next fourteen hours. This attack had lasted for one and one half days and was produced by the incarceration of stone 10 months later. Concretions were passed during another attack.

In order to make sure of the effect bilateral anesthesia was done but the diagnosis was not absolutely certain in the theoretically bilateral anesthesia could be sufficient.

Additional observations and experiments must determine whether splanchnic anesthesia is important means of treating nephrolithiasis and whether improvement of the diuresis is to be expected in reflex oliguria or anuria. J. W. VAN DER LINDEN.

Vanderloot D. and Haskett, C. C. The Relation of Acidosis to Nitrogen Retention in Experimental Nephritis. *South Afr J* 1920 1: 70.

Previous experiments upon dogs poisoned by methyl alcohol showed that while there is frequently reduction in the alkali reserve of the blood, the degree of acidosis and the severity of the intoxication did not always vary in the same direction.

In certain instances of severe or fatal poisoning the alkali reserve was found to be normal at a high normal level. It is very short time before the death of the animal. In other cases marked reduction in the alkali reserve was accompanied by evidence of severe intoxication and the animal subsequently recovered.

In experiment with mercuric chloride poisoning it was apparent that although there is reduction of the alkali reserve it is relatively insignificant in comparison with the increase in the non-protein nitrogen of the blood. It is well recognized that considerable damage to the renal structures may be present without leading to an appreciable retention of the nitrogen in the blood that is the increase in the blood nitrogen occurs relatively late, some time after the initial anatomical changes in the kidneys.

The results obtained by the authors seem to indicate that in some cases at least the acidosis is a response due to the retention of the intoxication by methyl alcohol or mercuric chloride. Not only is the reduction of the alkali reserve relatively slight in the beginning but evidence of renal damage may be obtained before there is any decrease in the alkali reserve. And when the renal alkali reserve is high it is by the intravenous injection of sodium bicarbonate little effect seems to be exerted on the course of the poisoning and the impairment of renal function. Finally reduction of the alkali reserve through starvation and the administration of dilute hydrochloric acid, though fully as great as that seen early in the course of poisoning by mercuric chloride does not lead to retention of nitrogen such as occurs in the latter condition.

The authors believe that in certain cases of mercuric chloride poisoning, sodium bicarbonate therapy is useless and that almost great care is exercised in the later course injection serum damage or even death may ensue. The administration of alkali in supposed cases of acidosis should be resorted to only when it has been definitely shown that there is a reduction of the renal alkali of the plasma, and even the oral or rectal administration should be preferred to the intravenous injection of the solution.

SAMUEL KARY, M.D.

Nelson, H. Tuberculosis of the Kidney and Nephrectomy. *Nordiskt Medicinskt Arkiv* (Norsk) 1919 1: 10.

The question of the tuberculous treatment of the tuberculous of the kidney has heretofore appeared indicated only in pronounced general tuberculosis with associated urogenital tuberculosis in the function of the other kidney, and in the first treatment of tuberculosis of the bladder following nephrectomy has again been raised. The renewed recommendation of conserving treatment stimulated an indication of renal tuberculosis to the first class from 1911 to 1920, with regard to the value of functional diagnosis and postoperative

results. Conservative treatment instead of operative treatment is justified in cases of unilateral disease provided it is possible constantly to determine the retrogression or advance of the condition. The bladder findings are not a reliable indication of the extent of renal disease but are decisive in indicating conservative treatment.

With regard to the value of functional tests the author states that in many cases ureteral catheterization was impossible because of bladder changes, and distortions of the bladder prevent the certain observation of the excretion of dyes. Therefore an accurate estimation of function was impossible. Although testing with dyes was of aid in the majority of cases, and particularly in tuberculous of the kidney, Nieden also observed cases in which it failed completely periods of normal excretion occurring when the kidneys were severely damaged, as shown by autopsy. Moreover even in undoubtedly functioning kidney there may be no delay or considerable delay in the excretion of dyes and sugar. This is true particularly in cases of tumor.

Waldio favors conservative treatment for cases of tuberculous of the kidney which are diagnosed by catheterization of the ureters, the finding of bacilli, and the presence of pyelographic changes in the ureter and the renal pelvis. As borderline cases he regards those in which the delay in the excretion of dyes is not more than that of the normal side. He believes that if this does not improve in two to three months, nephrectomy is indicated. In the author's opinion, the excretion of dyes is not of such great significance; moreover the danger to the second kidney during the two or three months of waiting is not to be disregarded.

With regard to the end results in cases of operation for treated tuberculous of the kidney, Nieden reports on twenty-two cases of unilateral disease and one case of bilateral involvement. Four of the former are excluded from the discussion because of other conditions. Of the remaining nineteen patients, seven are dead, and of the twelve others, several have survived the operation for nine years.

In only two of the unilateral cases was the disease in the early stages; the rest showed advanced changes. The immediate mortality (within two months) included fourteen deaths: four from uremia, one from suppurative peritonitis, and one from general infection. One of the cases of uremia was the case of bilateral disease. In the other the remaining kidney showed fatty degeneration without tuberculous.

In ten cases in which death occurred some time after operation (eleven and ten three months, respectively) the cause of death could not be determined. In nine cases the ultimate results were determined by subsequent examinations (on an average after four and one half years). In all, there was considerable improvement in the general condition, but in two cystitis was found. Nieden sutures the stump of the ureter (the most frequent cause of persistence of a fistula) according to the method of

Kuemmel, in an opening separate from the operative wound, so that it can be treated secondarily. In five cases the bladder symptoms completely ceased but in these there was no ulcer formation in the bladder before the operation. Of the remaining four cases, in which bladder symptoms were present, two showed no bladder changes previous to the operation. Therefore in three cases disturbances in the course of healing could be attributed to the stump of the ureter.

The question as to whether conservative measures other than tuberculin treatment—such, for example as sun and light treatment (Kirsch)—offer a better prognosis, the author leaves unanswered. Recently Harrass has reported that tuberculous of the kidney and testicle do not respond to heliotherapy. JOURNAL (2)

Muller G. P. Abnormality of the Kidney Pelvis with Pyonephrosis. *Surg. Cl. A. Am. S. J. N.* 20

Muller reports a very unusual case of joined pelvis. Following nephrotomy and nephrectomy of the right kidney, persistent fistula developed with intermittent discharge of urine. One year later the patient died. Autopsy showed the pelvis of the left kidney to be full of pus containing urine and to extend behind the aorta and vena cava to the right side where it communicated with the fistula.

Pyelograms would have cleared up the diagnosis previous to operation, but the patient refused extensive cystoscopic investigation.

The diagnosis was pyonephrosis on the left side with communicating renal pelvis.

C. D. PIERRELL, M. D.

Graubner, M. The Anatomy and Clinical Aspect of Epithelial Neoplasms of the Renal Pelvis (Zur Anatomie und Klinik der epithelialen Neubildungen des Nierenbeckens). *Deutsche Zeitschr. f. Chir.* 9, 2, 1910, 5

Epithelial tumors of the renal pelvis show a papillary structure. As a rule they are multiple. The author defines these tumors as growth degenerations of the epithelium of the efferent urinary passages which develop in predisposed tissue as the result of chronic irritation. A peculiar characteristic of the epithelial neoplasms of the renal pelvis is their tendency to extend to the ureter and bladder following the urinary stream. The tumor formations in the ureter and the bladder are frequently unlike the primary tumors of the renal pelvis.

The secondary tumor formations in the ureter and bladder may be due to implantation metastasis, a multilocular origin, growth by continuity and dissemination along the lymph tract, or retrograde transportation. The solid and pavement cell epithelial cancers spread by continuity from the renal pelvis to the ureter but only the uppermost portion of the ureter is affected. The simultaneous affection of the lower portion of the ureter and the bladder is more characteristic of papillomata.

The renal parenchyma presents the picture of a hydronephrotic contracted kidney. The peculiarities of the clinical picture of tumors of the renal pelvis are shrinkage of the volume of the kidney demonstrable by palpation, hydronephrosis with marked and frequent hematuria, papillary tumors of the vicinity of a ureteral orifice, the presence of villi in the urine of the ureters or bladder and the roentgenographic demonstration of a filling defect in a cystic kidney. As a rule epithelial tumors of the renal pelvis do not produce metastases by way of the blood and lymph streams.

Nephrectomy must always be supplemented by ureterectomy.

Four of the author's cases are reported.

FRANKLIN (2)

Handley W. S. On Subcapsular Pyelotomy, with Remarks on the Origin and Treatment of Renal Calculi. *Proc. R. Soc. Med. Lond.* 9, 2, 211 Sect. Surg.

After brief discussion of the probability of occasional calculus formation in cystitis in the renal cortex, the author proceeds to a critical survey of the different methods of removing stones from the kidney. He then describes in detail the operation of subcapsular pyelotomy. He performs it. His method differs from the ordinary pyelotomy in that flap of capsule is directed out toward the pelvis and beneath its entrance is raised to the cavity of the pelvis through an incision in the wall. Closure is effected by interrupted stitches in the doubled capsule on the posterior renal surface. When necessary, digital exploration of the kidney can be made with one finger in the pelvis. Extrusion of caly calculi through the renal cortex is also possible.

The operation described was performed in seven cases without the formation of fistula or other serious complications. In view of this fact and on account of the free access afforded, the author recommends it as the preferable procedure in the removal of kidney stones.

The article is well illustrated and is supplemented by three selected case records.

JOHN O. CURTIS, M.D.

Liebmann M. The Diagnosis of Malignant Tumors of the Kidney (*Die Diagnostik der malignen Nierentumoren*). *Ztschr. f. Med.* 9, 214, 247.

Malignant tumors of the kidney occur most frequently in the first year and the fourth and fifth decades of life. From the practical standpoint it is sufficient to differentiate between hypernephroma, carcinoma, sarcoma, and malignant embryonic nephroma. Hypernephroma constitutes 60 to 70 per cent of the growths. The pain usually begins early. The hemorrhage is very irregular and occurs more rarely in children than in adults. The first and hemorrhage is due to vascular erosion by the young neoplasm and the later hemorrhage to necrosis of the tumor.

Although tumor formation is the most certain

sign in the diagnosis, it is not demonstrable until late. The symptoms of congestion are produced by the growth of plugs of tumor tissue into the main blood channels. Symptomatic varicocele belongs to this group of symptoms. The most interesting metastases are those of hypernephroma, namely those found in the bones. These are usually less malignant than the primary tumor but as they remain single for a long time they do not contraindicate operation.

In discussing the diagnosis the author adheres to the Rothing classification of cases of malignant renal tumor.

Group 1. Cases with tumor and hematuria. In these the diagnosis is easy but the condition usually well advanced. As functional tests are a little avail unless considerable amount of parenchyma has been destroyed, roentgenographic pneumoperitoneum and pneumourography of the renal pelvis are of great importance.

Group 2. Cases with palpable tumor but without hematuria. As a rule the relationship of the tumor to the kidney may be determined by the methods mentioned but in some cases exploratory operation may be necessary.

Group 3. Cases with hematuria but without tumor. These are the most difficult to diagnose. If palpation fails, the kidney must be exposed and, possibly, must be split.

Regarding the nature of the tumor the author states that, because of their metastases by way of the lymph passages, carcinomata frequently cause symptoms of congestion. Hypernephromata metastasize by way of the blood stream.

Large size of the tumor does not contraindicate operation, but firm adhesions to the surroundings prevent successful operation.

In the treatment, only nephrectomy comes up for consideration. The postoperative mortality the author gives as 5 per cent. Unfortunately recurrences and metastases are the rule. In cases of hypernephroma which has not perforated into the large blood vessels or through the capsule of the kidney the prognosis following operation is favorable provided the tumor does not show particularly malignant histologic structure. Nephrectomy is of also also as palliative measure as the patient usually improves for some time in spite of the development of recurrences and metastases.

The author gives in tabular form operative and final results obtained in the last forty years.

JANSEN (2)

Price H. T. Urinary Calculi and Carcinoma of the Kidney in Children. *Pediatrics* 11, 1, 916, 211, 215.

The author states that in the diagnosis of the ailments of children not sufficient attention is paid to the genito-urinary tract. The urine of newborn babies may contain crystals, and during the first year of a child's life an attack of colic may be caused

by the passage of sand in the urinary tract. The author cites eleven cases of stones in the bladder or kidneys of young children.

The mortality from sarcoma of the kidney in children is high. Of five children with this condition who were seen by the author only one survived operation for a few months. The following conclusions are drawn:

The prevention or cure of pathological conditions of the genito-urinary tract has not proved as successful as desired.

Calculi should be discovered early after their formation in order to prevent serious suffering or death.

The fact that calculi may quickly form again should be borne in mind. In some cases this is the rule.

The early cure or removal of the source of infection of the urinary tract is sometimes impossible. The X-ray is the most valuable aid in the diagnosis of calculi.

Cystoscopic examination was made in a few of these cases but the diagnosis was made before this assistance was obtained.

In four cases of sarcoma in girls no definite etiological factor could be determined. The only sarcoma occurring in a boy was probably of traumatic origin.

JAMES A. H. MAGDOFF, M.D.

BLADDER, URETHRA, AND PENIS

Grempton, C. R. B. Partial Spontaneous Inversion of Diverticulum of the Bladder with Dumb-Bell Stone. *J. Urol.* 9 3, 12, 283.

A case of partial spontaneous inversion of a diverticulum of the bladder with the coincident occurrence of dumb-bell stone is reported. The patient had passed multiple renal stones and complained of constant pain in the perineum which became more intense after jolting or shaking and was accompanied by frequency of micturition. Cystoscopic examination revealed a bladder stone fixed to a tumor mass which was raised from the bladder wall. On exploration of the bladder the tumor mass proved to be a small diverticulum almost completely inverted into the bladder cavity and covered the external hypertrophic granulation tissue. A nodular pyriform-shaped stone as found in sacral union to the periphery of the inverted diverticulum. The inverted diverticulum, which was 3 cm in diameter was dissected from the wall with scissors.

Tenent eight cases of coincident bladder stone and diverticulum have been treated at the Mayo Clinic. In review of the literature the author was able to find only five cases of dumb-bell stone.

Hepburn, T. N. Obstruction of the Ureterovesical Valve. *Surg. Gynec. & Obst.* 9 3, 220, 368.

The author discusses in general way the etiology treatment and prognosis of obstruction of the ureterovesical valve, gives abstracts of five cases, and includes in his article pyelo ureterograms showing the condition.

This obstruction of the ureter may be due to spasm of its own circular fibers at its mouth or of those of the bladder wall. Every cystoscopist has noted that at times the ureteral or may contract to pale dumpled knob which cannot be catheterized. Again he has noted that the catheter may pass the orifice but is clamped in the intramural portion by a spasm of the bladder. When one ureter has been catheterized before the bladder spasm occurs it may be impossible to catheterize the other one and when the attempt is made, with a catheter in the bladder to determine the functional output from the non-catheterized side, it is found that there is no output of urine from this side. Often pain in such ureter will suggest renal pathology requiring nephrectomy when the kidney is normal but is functioning into a ureter temporarily closed by spasm at its outlet.

Occasionally the so called reno-renal reflex may be set up by a stone in the intramural portion of one ureter the urine passing this without difficulty but the other ureteral orifice in spasm causing renal distention and colic.

In certain cases of obstruction of the ureterovesical valve there may be a congenitally strictured or which at times may be completely closed by the muscle surrounding it. In others, in which there is trabeculation of the bladder wall, a cordal lesion due to syphilis or other cause may be the etiological factor. The author believes the majority of the cases come under the heading of spasm due to fatigue or nervous exhaustion analogous to spasm of the lower end of the esophagus, the pylorus, the ileocecal valve, or the anus. The attack may be precipitated by the passage of irritating urine, infection small stones, or crystals.

During the acute pain morphia and heat are necessary. Complete rest in bed is indicated until relaxation is established. If the spasm continues long enough to cause pyelitis, immediate suprapubic incision into the bladder should be done and both ureteral orifices dilated with sounds. If the ureters are widely dilated and pyelitis and marked parenchymal deficiency are found, complete destruction of the ureterovesical valves is advisable. If the distention of the ureters is only moderate and if the urine is free from pus and the kidney function is good, the treatment should consist in cutting the muscles down to the mucosa, the sphincter being left intact.

In conclusion the author states that while the results of the operative procedures suggested are problematical, hydro ureter, hydronephrosis, infection, stone formation, and destruction of renal parenchyma will develop if the obstruction continues.

C. D. HODGES, M.D.

Hirst, J. C. The Rapid Cure of Cystitis in Children. *N. York M. J. & Med. Rec.* 9 3, 220, 263.

The treatment advocated is described as follows: The child is placed in the dorsal lithotomy position and its knees are held apart by an anasthetist or nurse.

3 Occasionally anesthesia will be necessary because of the child's irritability, but not because of a pain caused by the manipulations. Light ether or chloroform anesthesia is all that is necessary and for a few seconds only.

3 A small soft rubber catheter is boiled and inserted into the bladder after proper preliminary cleansing of the vagina.

4 The urine in the bladder is allowed to flow out.

5 Irrigation of the bladder is necessary.

6 Through the catheter by means of a piston syringe 50 cc. of a 1 per cent. silver or cresol solution are injected, the catheter being then quickly withdrawn.

7 In most cases the solution will be retained from fifteen minutes to several hours. The younger the child the shorter the retention. Unless the solution is passed at once however sufficient will remain.

In most cases the results are immediate. The tenesmus promptly ceases, the frequency of micturition diminishes or ceases and the child immediately becomes comfortable and quiet. If the symptoms recur or the urine does not promptly clear, the injection may be repeated. In the cases of girls of 6 or 7 with cystitis of long standing and with occasional exacerbations, repeated injections are often necessary but in the acute cases, especially if no time has been wasted on improper treatment, the results are prompt and satisfactory.

The age of the child has no bearing whatever on the practicability of the injections. The urethra of female child is surprisingly distensible as is well known and no difficulty will be encountered. The author used the method without trouble in the case of an infant one month old.

C. R. O'CONNOR, M.D.

Gornack: The Treatment of Tuberculosis of the Bladder (*Behandlung der Blasen-tuberkulose*). *Verhandl. d. Kongr. Russ. Chir. Petrograd*, 9.

In Fleklorow's clinic and in the author's private practice there has not been a single case of tuberculosis of the bladder (about renal tuberculosis). Therefore the treatment was limited to directed healing toward the affected kidney. In 75 to 80 per cent of the cases, nephrectomy, as followed by healing of the tuberculous process in the bladder. These are cases also including circumscribed tuberculosis of the bladder and diffuse tuberculous disease of the bladder as tuberculous cystitis. In cases of tuberculous cystitis the bladder lesions do not heal spontaneously after nephrectomy and require supplementary local treatment. For the latter the author has successfully used high frequency currents according to the method of Heitz Boyer. If the bladder is large enough he applies the treatment to the bladder but if it is not, he performs an epicystostomy and applies it to the opened bladder.

In the discussion on urogenital tuberculosis following this paper Choboff claimed that in the rare

cases in which after properly carried-out nephrectomy the tuberculosis of the bladder does not disappear spontaneously healing may be obtained in the cystostomy and placing the bladder completely at rest.

For the diagnosis of tuberculosis of the kidney Petroff recommended the injection of 10 to 15 cc. of urine into the abdominal cavity of guinea pigs (not subcutaneously) and necropsy after ten to fifteen days. If the urine contained tubercle bacilli the entire peritoneum and the spleen will be found covered with milky tubercles. By this method the diagnosis may be made much more quickly than by the subcutaneous injection of the urine.

Petroff (2)

Zeligmond, F.: A Case of Hemorrhagic Purpura of the Bladder (Leber case). In *On Purpura cause hemorrhagica*. *Gefährd.* 9, 25, 613.

After reporting a characteristic case the author discusses the proper application of the term "purpura of the bladder." The disease which he believes is one in which hamaturia occurs without any previous warning or after only a slight indisposition, a moderate rise in the temperature and slight, if any, dysuria. With the exception of the blood and albumen nothing pathologic is demonstrable in the urine. On cystoscopic examination, however, red to dark brown hemorrhagic spots are seen on the normal mucous membrane which resemble the hemorrhagic spots in the skin and mucous membrane in constitutional purpura or scurvy. The term "purpura of the bladder" can be applied properly only to those cases in which there is general involvement of the blood vessels (purpura hemorrhagica, scurvy, etc.) or cases in which the inflammation of the bladder mucosa is responsible for the hemorrhages; the term "hemorrhagic cystitis" should be used.

High cystoscopic examination is of the greatest importance even when the hamaturia is very slight.

The treatment is directed against the constitutional disease. Rest and suitable diet are also indicated.

von Lössner (2)

Smith, C. G.: The Treatment of Cancer of the Bladder by Radium Implantation. *J. Urol.* 9, 3, 15, 7.

The implantation in bladder cancer of bare tubes of radium emanation of low potency or of radium bearing needles of 5 mgm. each will cause complete necrosis of the tumor provided the tubes are inserted on just and so placed that the entire periphery of the growth is brought thus reach of rays of lethal power.

Four classes of growths are suitable for this treatment: (1) small single papillary carcinomata in the bases of which bare emanation tubes may be deposited by intravesical methods, and (2) sessile carcinomata or the bases of large fungating growths destroyed with the cautery into which radium may be implanted through suprapubic cystostomy.

It is inadvisable to bring about the necrosis of tumor more than 3 or 4 cm in diameter as the absorption of toxins from the infected slough is apt to prove fatal.

In treating cancer of the bladder by this method the problem is to use enough radium to destroy the cancer but not enough to injure the patient.

A number of cases of cancer of the bladder in which the growth could not have been excised successfully has shown complete clinical disappearance of the growth following the implantation of radium.

C. R. O. CROWLEY, M.D.

Bearger, L.: A New Method of Applying Radium through the Cystoscope. *J. Urol.* 9, 3, 12, 27.

The purpose of the method described is to obviate the necessity of leaving the cystoscope in position during the time of radium contact. The equipment needed consists of special radium needles and applicators for inserting them into the growth, which can be used through the author's operating cystoscope or radium cystoscope.

The construction of the needles and applicators, the technique of introducing the needles into the growth, and the removal of the applicator and cystoscope are described and illustrated.

This method of applying radium is applicable to the treatment of carcinoma without surgery, treatment preliminary to surgery, and the treatment of metastases.

HARRY L. SAVOY, M.D.

Corboe, B. C.: Diathermy in the Treatment of Tumors of the Lower Urinary Tract. *J. Urol.* 9, 3, 15, 193.

In describing his technique the author states that diathermy is the application of thermic properties of bipolar currents of very high frequency and low tension (d'Arsenval current) as distinguished from the high tension unipolar current of Oudin which carbonizes and lessens heat penetration.

The effect desired is cooking through of the tissue to be destroyed by deep penetration of the current with a comparatively low degree of heat. This produces an aseptic death, a sealing of vascular elements, and subsequent formation of scar tissue.

I best coagulation of bladder tumors through suprapubic opening the author introduces the electrode through glass speculum and controls the degree of heat penetration by a thermometer in the rectum or vagina. The bladder is closed with Pezzer catheter drainage to allow reinspection and an opportunity for second application of diathermy in case of recurrence.

H. L. SAVOY, M.D.

Petroff, N.: Resection of the Urethra with Mobilization and Suture in Cicatricial Strictures and Fistulas (Die Resektion der Harnrekte mit Mobilisierung und Naht bei Narbenstricturen und Fisteln). *Arch. f. Med. Chir.* 922, 1930.

In every case of cicatricial stricture of the urethra in which the use of bougies is not sufficient, resection of the stricture followed by suture is preferable to

any plastic operation or free transplantation because of its certainty and simplicity.

In the years 1920 and 1921 the author operated on eleven cases with defects varying in length from 1.5 to 7 cm. and in one case with defect 3 cm. long. The last patient, who was afflicted with multiple gonococcal fistulae and suppuration, died from sepsis five days after the operation, but all the others were cured. In the cured cases, in which there was no after treatment with bougies, a stricture (fold?) was demonstrable on subsequent examination with a bougie only once, but the patient was able to urinate without difficulty and in the other cases the urethra remained patent. However the author was able to follow his cases for only three or four months.

At operation, Petroff made a temporary suprapubic bladder fistula for the introduction of a metallic catheter by way of the bladder in searching for the stricture.

MARWEDEN, (Z.)

GENITAL ORGANS

Horn, W. and Orator, V.: Hypertrophy of the Prostate (Zur Frage der Prostatahypertrophie). *Zschr. f. Path.* 9, xxviii, 340.

The authors attempted to determine whether hypertrophy of the prostate is true tumor formation or a compensatory hypertrophy and to discover the anatomical origin of the glandular nodules. For clear understanding of the anatomy the following groups of glands are distinguished:

1. The mucous glands of the urethral mucosa.

The submucous or paraprostatic glands which extend to the muscular layer and fall into three groups: (1) the glandular paraprostatica superiores, or the group of Jones, which are embedded in the dorsal side of the urethra above the colliculus seminalis and at the fundus of the bladder; (2) the glandular paraprostatica mediales, which lie at the side of the colliculus seminalis, their ducts opening on the lateral wall of the urethra; and (3) the glandular paraprostatica inferiores, which are found directly above the urogenital triangle in the ventral urethral wall.

3. The true prostatic glands, which lie external to the inner sphincter of the urethra, are surrounded by muscle fibers and are to be classified, according to their position in relation to the colliculus seminalis, into the preperimatic (cranial) and the retroperimatic (caudal) group.

With regard to true prostatic hypertrophy in which two types may be distinguished—one with enlargement of the median lobe, and the other with enlargement of the lateral lobes—the authors state that on the basis of serial sections it has been demonstrated that the condition usually responsible is hypertrophy of the upper and middle groups of submucous paraprostatic glands mentioned. In certain cases, however, the preperimatic true prostatic glands may be concerned in enlargement of the middle lobe and the retroperimatic true prostatic glands in enlargement of the lateral lobes. A reliable

conclusion is possible however only in the early stages before secondary perforations of the limiting maculae have occurred.

Enlargement of the lower genital group of para-prostatic glands is as yet unknown, but the authors believe such a condition is possible. Attention is made of Simonson's hypothesis that the nodules forming the basis of prostatic hypertrophy are caused by proliferation originated by hormone from the testicle to replace atrophied prostatic tissue. In the authors' opinion however the adenoma nodules are tumorous proliferations. Their proposal to drop the term "prostatic hypertrophy" as misleading and to use instead the term "adenoma of the paraprostatic glands" deserves attention.

Brace (2)

Von Borsz, J. Adenoma of the Accessory Glands Suggesting Prostatic Hypertrophy (Ueber den Bilde der Prostatahypertrophie auf retrograde Adenome der akzessorischen Druesen). *Fischer's Arch. Chir.* 93, 29.

In the normally developed adult the prostate weighs 15 to 20 gm. and consists half of gland tissue and half of muscular and connective tissue. Senile involution of the prostate sets in between the fifth and sixth years of age. At the same time an enlargement of the periurethral gland begins. The latter are of endodermal origin and develop from portions of the Wolffian duct.

The prostate lies external to the sphincter and the accessory glands are within it. In the so-called hypertrophy of the prostate, it is never a matter of enlargement of the prostate itself but of a mass of tumor-like proliferation of these often extraordinarily enlarged or multiplied groups of glands. Such a group of glands removed by operation is seen to consist of a large number of individual nodules ranging in size from that of a pin head to that of bean or hazelnut. These can be separated by a blunt instrument and without the use of force. Each possesses a capsule. The prostate itself is compressed by this tumor and appears as its capsule. After the operation, freed from pressure, it resumes its former position and size.

Because of these facts the author believes that the term "adenoma of fibro adenoma of the accessory periurethral glands" should be substituted for the term "hypertrophy of the prostate."

Von Borsz (2)

Marion. Epididymectomy in Genital Tuberculosis (Die Epididymektomie beim Genitaltuberkulose). *Praxis* 1914, 9, 3, 200-20.

The author urges the treatment of genital tuberculosis by epididymectomy. Citing ninety-five recent cases, he denies that in the large majority the testis is involved as well as the epididymis. In his series, only thirteen showed tubercle involvement.

Epididymectomy is preferable to castration even when there are secondary infections and fistulae.

The idea that surgical removal of the tuberculous lesions of the spermatic duct of the ductus deferens. Long continued medical treatment usually fails to effect cure and often leads to involvement of the epididymis or the formation of abscesses and fistulae.

Epididymectomy is very simple. The technique used by the author is described briefly. Of twenty-five patients subjected to this operation, nineteen were cured.

Kellgren, Sweden, M.D.

Arnosowitch, G. D. Anomalies in the Descent of the Testicles in the Weak Minded (Störungen des Absteigens des Descensus testicularis bei Schwachmüdigkeit). *Vierteljahrsschrift für Medizin*, 1914, 1, 1.

To the physical stigmata of mental inferiority belong, among others, anomalies in the descent of the testicles consisting in their retention or retarded descent. With regard to these anomalies Arnosowitch examined 235 pupils in various institutions for retarded mental development (idiots, imbeciles, etc.). The anomaly was found in 25.42 per cent. The incidence was greatest in children between 3 and 5 years of age and lowest in those at the age of puberty. The author draws the following conclusions:

1. Retention of the testicles is a congenital anomaly of embryological origin which, in association with other morphological and functional disturbances, indicates general arrest of development.

2. The anomaly is one of the most common in psychopathic children (3.42 per cent).

3. The condition may be unilateral or bilateral, and occasionally is associated with congenital hernia (5.06 per cent). It is found most frequently in the cases of serious retardation of psychic development which are characterized by numerous physical stigmas.

4. In many cases the retention is only temporary and the testicles still reach to proper position at puberty.

5. Retention of the testicle is of itself not signs of hereditary taint or disturbance of psychic development.

Brace (7)

MISCELLANEOUS

Brensch, W. F. The Relation of the General Practitioner to the Urologist. *Urologic Med.* 9, 3, 4, 25.

The general practitioner has the advantage, which the urologist usually does not have, of observing the first symptoms of lesions of the urinary tract. The author outlines the significance of some of the common symptoms observed in surgical conditions in the urinary tract. One of the most common symptoms and a symptom of marked clinical importance is hematuria. Hematuria without bladder symptoms is usually of renal origin. Profuse hematuria of short duration without bladder symptoms is suggestive of renal neoplasms. If the bleeding is associated with bladder symptoms the condition may be either transient infection, or if permanent, due to

a neoplasm. With regard to urinary frequency the author states that there are three important types: that occurring in the young adult; that occurring in the male at the age of prostatic enlargement; and that occurring in the female. Persistent diurnal frequency and pyuria suggest renal tuberculosis. Frequency in the female may be due to a transient colon bacillus infection. If it persists, further investigation should be made. Frequency caused by an obstructing prostate is often confused with cystitis, but the absence of residual urine and the variations in the character of the prostatic on rectal palpation often indicate the correct diagnosis. Not infrequently prostatic obstruction is due to an overlooked malignant enlargement. Rectal palpation should be routinely carried out in the cases of adult males with symptoms of disease of the urinary tract.

Calc due to ureteral stone is frequently diagnosed as appendicitis. In the absence of localized tenderness and a high leucocyte count a delay is justified in most cases until an examination of the urine and a roentgenogram of the urinary tract can be made.

Small renal stones not infrequently pass, but repeated colics or several days of constant pain make investigation of the urinary tract imperative. Under certain circumstances, acute urinary retention is more safely relieved by suprapubic drainage than by making passage through the urethra with instruments.

It is evident that the early intelligent observation and advice of the general practitioner is of the greatest importance to the patient with disease involving the urinary tract, and that the early recognition of surgical conditions and cooperation with the urologist are large factors in recovery.

Keyser, L. D. The Etiology of Urinary Lithiasis. An Experimental Study. *Arch Surg* 93: 4, 55.

The author endeavored to subject the commoner theories of calculus formation to laboratory experiment. Efforts to increase the visible crystalline content of the urine by the forced oral, intramuscular and subcutaneous administration of calcium salts proved futile. The administration of oxalates caused moderate oxaluria but no concretum formation, while the subcutaneous injection of normal butyl oxalate produced an intense oxaluria. A change in the form of the calcium oxalate crystals to a coarser type and the consequent formation of calculi as noted in one instance in the series. Bits of tissue (muscle and fascia) placed in the renal pelvis to act as nuclei became impregnated with lime salts only in the presence of infection. Under sterile conditions such impregnation did not take place.

The formation of calculi was studied also by feeding diamino oxalic acid (oxamid) to rabbits after the method of Ebert and Nicolai. Fifty per cent of the rabbits and dogs fed oxamid showed calculus formation in the urinary tract. Cultures from the kidneys and the urine of such animals were consistently sterile. The oxamid seemed to be excreted

as such or as hydrolysis product in combination with organic pigment material. The crystals of oxamid thus deposited differed in form from the synthetic product fed and showed a tendency to fusion which varied with the several morphologic varieties of crystals observed. Precipitation of synthetic oxamid from human or animal urine *in vitro* yielded crystalline forms identical with those passed by animals fed the drug. These crystals also tended to fuse and form concretions. By removing most of the organic pigment material from the stool forming oxamid crystals a form closely resembling synthetic oxamid in crystalline morphology was obtained.

Oxamid seemed to be specifically precipitated in combination with the colloidal organic material normally present in animal urine. In this precipitation there is a tendency to fusion and stone formation, a fact suggesting that calculi in human beings may be due to atypical deposition of crystals by pathologic colloids present in pus formed by bacterial infection or brought into the urinary stream by anomalous metabolic processes.

In case of oxamid stone formation, mechanical factors such as organic nuclei, stasis, and diverticula, while not essential to the process greatly increase the deposition of fusing crystals and hence cause the stone to grow. This suggests the possibility that such factors play a similar rôle in the formation of the stones seen clinically.

Several experiments illustrating the effect of coloids produced bacterially in the precipitation of small concretions are cited. Twelve rabbits were fed with sodium oxalate after colon-bacillus infection had been produced in one kidney. Four of these developed small concretions in the calices of the infected kidney.

In one instance concretions were produced by the intravenous injection of colon bacilli grown from a calculus obtained from clinical case into a rabbit whose kidney had been previously traumatized.

It is suggested that there are four protective mechanisms against the formation of stone: (1) the natural metabolic defense against the over-concentration of urinary crystalloids; (2) the protective coloids of the urine; (3) the ability of the urine when saturation is reached, to deposit crystals singly in isolated units; and (4) the form and muscular activity of the urinary tract.

Calculi are due to abnormal colloidal matter in urine. This probably arises most frequently from inflammatory exudates of specific bacteria. The possibility that bacteria may be formed from excessive crystalline excretion is emphasized. Stasis in the urinary tract, while not a cause of stone, promotes stone growth when the stone-forming process is present.

Bachrach, R. Th. Operative Treatment of Genital Tuberculosis. (*Zur operativen Behandlung der Genitaltuberculose*). *Ztschr f urol Chir* 9: 2, 11, 14.

The author reports that in the course of years epididymectomy was practiced more frequently by

Zuckerkandl in isolated tuberculous of the epididymis and in cases in which the extent of the process did not necessitate the removal of the testis. The technique of epididymectomy was as follows:

After the incision in the skin of the scrotum was made under local anesthesia the vas deferens was divided and the head of the epididymis dissected from the testis along its medial surface with care to preserve the venous plexus emanating from the testis. After opening of the tunica vaginalis, the scrotum is split between the testis and epididymis and from there the latter is dissected in an upward direction. The stump of the vas deferens was then sutured later a slit in the skin above the incisional wound to isolate it and to facilitate local treatment.

In cases of marked caseous softening of the epididymis, in which a dissectional extirpation of the organ is not always possible the diseased tissue may be excised and the wound surface sutured into the skin slit.

Of seventy cases of tuberculous of the testes or epididymis, thirty-two were treated by unilateral castration and two by total castration. Operation was done thirty-six times for tuberculous of the epididymis (eight bilateral epididymectomies, twenty-one unilateral epididymectomies, and curettage of the tuberculous focus and implantation of the sound surface in the skin in seven cases).

The ages of the patients were as follows: 51 to 70 years five; 40 to 50 years twenty-one; 30 to 40

years, fifteen; 20 to 30 years, eight; 10 to 20 years, fourteen; and 60 to 70 years, seven. Just as in tuberculous of the bones and joints, trauma was an important predisposing factor also in tuberculous of the epididymis. Gonorrhea was found in only sixteen of the author's cases. In twenty there was an associated lesion at the pulmonary apices. Complicating tuberculous of other organs (other found in eleven cases (including tuberculous adenitis in children). Tuberculous of the kidney and of the genital organs is frequently associated with tuberculous of the epididymis. The author found tuberculous of the kidney in 20 per cent of his cases. In eight, nephrectomy had been done, and in five nephrectomy and an epididymectomy.

In general the author is opposed to the conservative treatment of genital tuberculous. It has been able to trace twenty-five of the patients he treated surgically. Five are dead at the end of three years and fifteen are well. Of the latter six were treated by epididymectomy, eight were subjected to unilateral castration, and one was treated by bilateral castration.

In conclusion, Bachrach reports the case of a 33-year-old man in which, after failure of many methods, the spreading tuberculous process was finally arrested by extirpation of the seminal vesicle. The time since the operation is still too short, however, to warrant definite conclusions as to the end result. (22)

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE; POSTOPERATIVE TREATMENT

Weston, F. G., and Howard, M. O.: Magnesium Sulphate as a Sedative. *Am J M Sc* 93, div 43

Pure recrystallized magnesium sulphate with its water of crystallization was made into a 50 per cent solution with distilled water, sterilized, and injected subcutaneously and intramuscularly. The authors have given more than a thousand such injections. No local pain or sloughing occurred when proper aseptic technique was used. In 83 per cent of the cases the sedative action was prompt, the patient becoming quiet after from fifteen to thirty minutes and sleeping from five to seven hours. In few instances the patient became quiet but did not sleep. The effect persisted for from five to ten hours.

In many cases the salt was found to be an excellent substitute for morphine and hyoscyne. In 6 per cent of the cases it was necessary to repeat the dose of 5 ccm before sedation was obtained. In 1 per cent no effect at all as noted after the injection of three or more doses.

In the dose necessary to produce sedative effects the salt is harmless. The authors have not had an opportunity to use the salt in pre-operative or post-operative cases or acute thyrotoxicosis.

E. C. ROSSIGNOL, M.D.

ANESTHESIA

Robledo y Sanz: Arterial Pressure in the Different Types of Anesthetics (La presión arterial en las distintas anestésicas). *Rev esp de ciruj* 9, 2, 344

The authors have made 60 experimental determinations of the blood pressure under different types of anesthesia: chloroform anesthesia in forty-six cases; ether anesthesia in four; mixed anesthesia (chloroform and ether) in fifteen; spinal anesthesia in fifteen; regional anesthesia in four; and local anesthesia in sixteen.

From these investigations he draws the following conclusions:

Anesthesia in general, and chloroform anesthesia in particular, causes the arterial pressure to fall in more than 50 per cent of the cases during the period of anesthesia.

Mixed anesthesia also may cause a fall in the arterial pressure but does not do so in such a high percentage of cases as general anesthesia.

Spinal anesthesia frequently causes the arterial pressure to drop. Therefore it is not so harmless as is generally believed.

Whatever the pathology of shock, general anesthesia (chloroform anesthesia especially) favors

its development by causing a rapid fall in the arterial pressure.

5 The arterial pressure after the induction of anesthesia depends upon many factors, including idiosyncrasy to the anesthetic, the influence of hospital environment upon the patient, the seriousness of the traumatism, the patient's condition, etc.

6 Local anesthesia usually increases the arterial pressure or does not change it at all.

W. A. BRYMAN

Valentin, B.: The Freezing of Nerves (Die Nervenverfrierung). *Med Klin* 9, 3, xviii, 337

The sequence in which the individual elements of mixed nerve stems lose their function in freezing of the nerve has not yet been determined with certainty. The views of many investigators are diametrically opposed. The most reliable findings are those of Laewen, who showed that the sensory nerve conduction is lost first and the motor function somewhat later. Interruption of conduction persists longest after section of the nerve, continuing until the beginning of regeneration. It lasts for some time also when alcohol and ammonia are used because these cause firm clots. Freezing interrupts conduction for only three days. Ethyl chloride and carbolic acid differ only in the degree of the cold, the former giving 38 degrees and the latter 78 degrees, but the effect is the same.

If we knew the effects of the loss of function in the individual portions of a mixed nerve, it would be possible to learn also the length of time necessary to obtain them and thus to exclude only that portion of the nerve which it is desired to block.

It appears that the freezing procedure offers the best outlook for the future, especially as it is applicable wherever temporary exclusion is required. Microscopic examination on the third day after the freezing reveals degeneration of the central stump but soon thereafter shows regeneration.

In conclusion the author calls attention to recent work on this subject by Bielschowsky and supplements his article with a bibliography.

WUNDERLICH (Z)

Dewees, H.: Blood-Sugar Determinations in Cases of Operation Performed under Local Anesthesia and Ether Anesthesia (Ueber Blutzuckerbestimmungen bei Operationen in Lokalanästhesie und Äthernarkose). *Arch f Klin Chir* 9, cxvii, 73

In practically all cases of extraperitoneal operations performed under local anesthesia induced with novocaine-adrenalin solution, a slight increase in the blood sugar occurs, which is due entirely to the injection of the anesthetic fluid. In cases of lapar-

rotomy performed under local anesthesia and ether anesthesia, the blood sugar may increase from two and one-half to four times the normal value. This is attributed to a complex effect of anoxic stimuli upon the peritoneum and the sympathetic nerves in the upper abdomen. Postoperative glycosuria is rare even when there is considerable increase in the blood sugar during the operation, but it may appear after local anesthesia as well as after anesthesia when there is no increase in the blood sugar.

RAEDKE (7)

Witzel, P. L. Splanchnic Anesthesia (Anesthesia splanchnica). *Arch med & Chirurg* 9 2, 211, 217

Witzel reports the results obtained in the Lappes method, in which only one posterior injection of the anesthetic is given. With the Braun method tried in three cases he obtained satisfactory anesthesia in only one case. Altogether thirty-three cases of surgical diseases of the upper abdomen were operated upon under splanchnic anesthesia. In twenty-six the Lappes method as used, 30 c cm of 1 per cent novocaine-adrenalin solution being administered at one injection on the right side. The results were satisfactory in twenty-three cases (89.46 per cent) and mediocre in three. In four cases it was necessary to complete the anesthesia with 5 c cm of the same solution given according to the Braun technique. In two of the three cases in which the results were mediocre this anesthesia was the first anesthesia, and in one the needle was too short. An important advantage of splanchnic anesthesia is its duration, which may be as long as two and one-half hours.

W. A. BRAUN

Mosler, W. R. The Use of Paravertebral Nerve Block Anesthesia in General Surgery. *Minnesota Med* 9 3, 1, 23

Local anesthetic procedures are divided into (1) terminal infiltration, (2) field block, and (3) nerve block. The newer methods of nerve block were gradually evolved by efforts to widen the scope of operations which may be performed under local anesthesia. In paravertebral nerve block the nerves are blocked at their points of emergence from the spinal canal; this may be applied to any spinal nerve and to any level of the spine. Each procedure is called by the name of the vertebral segment to which it belongs.

Block of the cervical plexus may be performed by (1) the posterior route, (2) the lateral direct route, and (3) the lateral oblique route. The lateral methods give deeper and more efficient anesthesia. Of the lateral methods the oblique is to be preferred to the direct because in the former there is no danger of injuring the vertebral canal and spinal cord. Block of the cervical plexus by the lateral oblique method is safe and efficient procedure and gives an adequate anesthesia for all operations on the neck.

Thoracic and lumbar paravertebral nerve block is most efficient in laminectomy and thoracic opera-

tions. It also has a limited value in radical removal of the breast and in nephrectomy. The use of a lateral paravertebral nerve block for abdominal operations is not to be recommended. The technique is highly complicated, tedious, and time-consuming. The anesthesia is often insufficient, the demands made upon the patient's psyche are rather severe, and the injections are not free from risk. In the experience of the Mayo Clinic this procedure has been unsatisfactory for abdominal surgery even in the hands of experts. In block of the sacral nerve preference is given to the trans-sacral method in which injection of the nerves at the posterior sacral foramina is combined with a low epidural injection. By this method a very good anesthesia of the entire pelvic floor and viscera is produced. When it is combined with a field block in the abdominal wall for suprapubic incision, resection of the bladder and prostatectomy may be performed painlessly.

The value of paravertebral nerve block is not the same at all levels of the spine. It is most efficient in surgery of the pelvic floor and viscera and the neck. It is least satisfactory in abdominal surgery in which its use is never indicated.

Clauprin, G. A Clinico-Statistical Contribution on Spinal and Local Anesthesia from the Agopla Hospital (Contributo clinico-statistico sulla anestesia ed anestesie locali praticate presso l'Aspeltaria splanchnica di Agopla). *Policlinico* Rome, 9 2, 221, 222, 223

In the Agopla Hospital spinal anesthesia was induced in the cases of 336 patients ranging in age from 20 to 60 years. An 84% stovaine was employed. In 57 of these a positive immediate anesthesia was obtained; its duration varied from one and one-half to two hours. In 15 cases local anesthesia was induced for minor operations, novocaine being used in the majority. From this experience Claprin draws the following conclusions:

Spinal anesthesia may be employed when general and local anesthesia are contraindicated.

Dangers, failures, and inconveniences depend upon the dosage, the nature, purity and stability of the preparation used and the region in which the puncture is made. Stovaine mixtures of stovaine and novocaine and novocaine and adrenalin have been found non-toxic. For sub-umbilical operations the puncture should be made at the level of the third or fourth vertebra.

Local anesthesia induced with novocaine and adrenalin should be used when general anesthesia and spinal anesthesia are contraindicated.

W. A. BRAUN

Frascone, M. Supra-Umbilical Spinal Anesthesia (La rachianestesia sopra-ombelicalica). *Arch med & Chirurg* 9 2, 21, 207

After preliminary injection of 0.1 gm of novocaine and 0.05 gm of scopalamine, a subumbilical spinal puncture is performed with the patient in the sitting position. From 20 to 30 c cm of cerebro-

spinal fluid are withdrawn, depending on the pressure. Anesthesia is then induced with 0.125 gm of sinclair (French novocaine) dissolved in 3 c cm of distilled water. As this is injected, cerebrospinal fluid is withdrawn into the syringe and mixed with it. For operations on the perineum or lower extremities, 0.9 gm of sinclair is sufficient. After the injection the patient is kept in the sitting position for five minutes and then allowed to lie undisturbed for five minutes before the operation is begun.

In three hundred cases treated in this manner there was only one postoperative death, that of a man 75 years old who had a strangulated hernia which caused fecal vomiting.

A disadvantage of the method is that the anesthesia is imperfect in about 30 per cent of the cases. In such cases infiltration of the abdominal wall with 1 per cent novocaine is indicated.

Tonic symptoms sometimes arise from the spread of the sinclair to the central nervous system. The vomiting center is first involved. An injection of 0.5 to 1 gm will overcome this condition.

Guibal reported five cases of apnoea. One patient died, but the others were restored by artificial respiration. Bloch and Hertz reported four cases of apnoea preceded by nausea, sweating,

pallor, miosis, absence of the ocular reflexes, and slowing of the pulse which were cured by caffeine injections.

An almost constant phenomenon, especially in cases with abdominal inflammation, is anal incontinence. This is considered an advantage because the discharge of pent up fecal material during the operation renders unnecessary the use of post-operative enemata and medication to induce bowel movements and does not endanger the asepsis of the wound. Headache associated with this type of anesthesia is of short duration. Spinal hemorrhage and aseptic meningitis as complications have been reported. Septic meningitis following the procedure is due probably to bacteria from the blood stream. Tuberculous meningitis has been considered a possible sequela.

In spite of these inconveniences and possible dangers, spinal anesthesia has fewer complications than inhalation anesthesia. Its advantages are that the anesthetic is rapidly eliminated, operation may be performed on persons whose condition contraindicates inhalation anesthesia, there is absence of shock, the muscles are completely relaxed, breathing is regular, vomiting does not occur, the patient is able to co-operate, and the services of one assistant may be dispensed with. KILLGORE SMITH, M.D.

PHYSICO CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Juergli A: The Rational Roentgen-Ray Dosage in the Treatment of Surgical Diseases (Die rationelle Röntgenstrahlendosis bei Behandlung chirurgischer Krankheiten). *Strahlentherapie* 9: 221, 1934

This article deals with the dosage for carcinoma, sarcoma, and tuberculosis. The conception of the carcinoma dose as a curative dose is rejected. Instead, this dose is considered to be the minimum dose which will usually exert an influence on carcinoma. The upper limit of the allowable dosage is estimated as 1:10 to 1:25 per cent of the skin-unit dose. This assumption is based on experimental findings.

The effect on the focus is purely local, ceasing abruptly with the affected capillaries and the carcinoma cells. The important element is the action of the X-ray in carcinoma is primary injury of the carcinoma cells. From this the conclusion is to be drawn that the required minimum dosage must be administered to the tumor region endangered. A growth-inhibiting effect upon the carcinoma has not been observed following the administration of 20 to 40 per cent of the skin-unit dose.

Twenty per cent of sarcomata are refractory; others disappear very readily and others regress but do not disappear entirely. The last mentioned usually have a medium sensitivity, which may be near the skin-unit dose. Therefore the sarcoma dose as originally defined is rejected. It is rather useful medium. In sarcomata the dose may be scattered.

In the treatment of tuberculosis, roentgenologists are returning to the use of small doses. The author describes the technique for the treatment of lymphomata, peritonitis, and joint infection.

SLURKIN (7)

Maximow A. A. Studies of the Changes Produced by the Roentgen Rays in Inflamed Connective Tissue. *J. Exper. Med.* 9: 5, 2227-24, 1919

The inflammatory changes in connective tissue have been the subject of investigation by the author for many years. To determine the changes produced by irradiation, he conducted a number of experiments on rabbits. An aseptic inflammation was caused by introducing blocks of collagen into the subcutaneous or intermuscular loose connective tissue of the abdomen and subjecting this area to roentgen irradiation. Different animals were given an increasing number of exposures and microscopic examination of the tissues was made at intervals thereafter. The findings were checked up by controls.

It was found that the action of the roentgen rays on inflamed tissue manifests itself first by a considerable depression of the usual reaction of the fibro-

blasts. Under normal circumstances these elements begin to divide mitotically during the first twenty-four hours and soon form a layer of new connective tissue surrounding the foreign body. After treatment with the roentgen rays they remain idle, do not multiply at all or begin very late, and often divide abnormally. They undergo a high degree of pathological hypertrophy of protoplasm and nucleus. Instead of mitosis, amitotic constrictions often appear in the nucleus. The capacity for collagen formation also seems to be lost.

With these changes of the fibroblasts an intense edema of the connective tissue surrounding the foreign body is noted, and in the immediate neighborhood of the latter a thick layer of net-like clotted fibrous exudate is formed.

A distinctive qualitative change can be found in the leucocytes and polyblasts. Degeneration is present here only to the same extent as in common aseptic inflammation. First, however, the rate and the duration of the emigration of all the cells coming from the blood are increased, and, secondly, there is a distinct delay in the process of the common transformations usually undergone by the polyblasts on the field of inflammation. Above all, the transformation of the polyblasts into fixed resting forms seems to be delayed. Therefore even in the late stages, the tissue is overcrowded with granular special leucocytes and mostly young, hypoblastic-like polyblasts, whereas in the early stages the local resting wandering cells undergo mobilization slowly.

In the blood vessels swelling of the endothelial cells with fragmentation of the nuclei and, in the striated muscles, degeneration of the fibers can be detected. In the latter both typical coagulation necrosis and trophy occur accompanied by loss of striation, separation of the fibrils from one another, relative increase in sarcoplasm and amitotic division of nuclei.

It is evident that the changes in the cells of the inflamed area, chiefly in the fibroblasts, but also in the muscle fibers, under the influence of the roentgen rays are the result of complicated interrelations between two different agents, first, the inflammation stimulus, and, secondly, the roentgen energy. In the doses used, neither agent alone was able to produce the changes observed. It seemed to be immaterial, to a certain degree, which of the two stimuli was applied first—whether the foreign body was introduced into previously exposed tissue or the tissue was exposed after the introduction of the body.

The strong inhibitory and deleterious influence of the roentgen rays on inflamed connective tissue should therefore be borne in mind in the therapeutic use of this kind of energy, especially in cases of malignant tumors. ANDREW HARTMAN, M. D.

Kok, F., and Vorlaender K. Biological Investigations of the Effect of Irradiation on Carcinoma (Biologische Versuche ueber die Wirkung der Bestrahlung auf das Carcinom) *Strahlentherapie* 9: 21 497

The author reports on very extensive investigations in which great care was taken to avoid all the dosimetric and biological causes of error which have led to variation in the results obtained heretofore. As it is impossible to conduct extensive serial investigations on human carcinomata under entirely similar preliminary conditions, inoculation tumors of mice were used for the biological tests.

In order to achieve comparison with the treatment given in clinical cases an attempt was first made to determine the epulatory and erythema dosage in the mouse. It was found that the lower limit of the epulatory dose is about 5 (—the electrostatic unit) whereas inflammation of the skin or

esicle formations were not observed even when very much higher doses were used. Therefore direct calculation by the methods applied in clinical cases to determine the so called carcinoma dose in the mouse is impossible. It may be assumed, however, that the carcinoma dosage for the mouse tumors is a little higher—about 300 e.

The macroscopic study of the skin of the irradiated animals showed changes not only on the irradiated areas, but also on the non irradiated areas. This indirect effect was fundamentally similar to the direct effect but was weaker. It was not produced by scattering or secondary irradiation as it was found also in areas which could not have been exposed to such irradiation. This constantly found effect in the non irradiated skin suggests that the rays have a general effect which, according to Opitz is an increase in the natural protective reaction.

HARRIS (Z)

MISCELLANEOUS

CLINICAL ENTITIES GENERAL PHYSIOLOGICAL CONDITIONS

Crile, G. W. Studies in Exhaustion Physical Trauma. (Arch Surg 1913) 4:470

This article is one of a series written by Crile on exhaustion. The studies included observations on the blood pressure following physical injury to various organs and tissues histologic changes in various organs changes in the blood heat conductivity changes in electrical conductivity and temperature variations in the brain and liver.

Report of this research in regard to the early and late effect of such trauma has been published from time to time.

There is a definite quantitative relationship between physical trauma and shock which can be estimated from blood pressure variations the amount of shock depends upon the amount of injured tissue the intensity of the injury itself and the number of injury impacts. It is not the deep protected organs or structures produce collapse rather than shock while injuries to the more exposed parts cause greater shock.

There is a direct relationship also between the nerve supply of the injured part and the degree of shock. Shock can be eliminated by blocking the nerve supply of the part with a local anesthetic. Exhaustion of the somotor mechanism is a important factor although not the only productive factor in shock.

The findings of series of experiment showing the histologic effect of trauma to the various organs are tabulated. Trauma under ether under nitrous oxide under anesthesia and after the complete severance of the spinal cord was studied. Less shock was noted under nitrous oxide oxygen anesthesia than when ether was used and after the cord completely severed no amount of trauma caused the subjective shock symptoms or the characteristic histologic changes noted in shock.

Experiments were made to determine whether or not shock be transmitted through the blood from a traumatized to a non traumatized animal either by blood transfusion or a direct vascular anastomosis. The shocked dog showed no histologic changes similar to that of shock.

Other experiments were made to determine the effect of physical trauma to organs other than the central nervous system. Changes were noted in the liver and to a less degree in the suprarenals. Other organs were apparently not affected. Studies were made of the suprarenal output after shock, venous changes in the blood, the electric conductivity of the brain and liver and temperature variations in the brain and liver during shock.

On the basis of these exhaustive studies, the author concludes that the principal causes of exhaustion and shock after physical trauma are changes in the central nervous system. To a less degree the liver and suprarenals are involved. There is no direct evidence indicating a constant primary change in the blood produced by physical trauma. A disturbance from emotional changes, nervousness, or emotion is a critical factor with that produced by physical trauma.

H. M. CAMP, M.D.

Banting, L. J. Insulin. J. M. A. 5: 54-58. 1912.

The author reviews briefly the history of diabetes from the middle of the 18th century to the present time. He tells of the experimental work and describes the clinical use reported by Banting.

Block obstruction of the pancreatic duct caused destruction of acinar tissues without producing diabetic symptoms. This condition was experimentally reproduced by Banting who found that the injection of the degenerated remnant of the pancreas into diabetic dog resulted in marked reduction in the blood sugar. Later an extract made from the degenerated gland was used with like result. This extract was the first insulin.

Because of the expense and time required to produce pancreatic degeneration efforts were directed to obtain insulin by some other method. The best extract was made from the pancreas of fetal cowards in this manner enough of the extract obtained to continue the experimental work. It was found that with insulin the blood sugar of completely depancreatized dogs can be maintained at a normal limit and that the life of such a diabetic dog can be prolonged indefinitely. Similar effects of the extract were obtained in clinical use of diabetes. It was discovered also that a extract of insulin is unable to produce too great a reduction in the blood sugar with symptoms resembling those of diabetic coma.

The numerous production of insulin and the methods adopted for its introduction to the profession in order to safeguard the public are discussed in detail.

WILLIAM F. MCGEE, M.D.

Blood, A. Traumatic Epithelial Cysts (Zur Kenntnis der traumatischen Epithelien). Arch f. d. Chir. 1913, 80:5.

The author has examined histologically a large number of epithelial cysts in the Surgical Division of the General Hospital at Vienna. He reports with illustrations, six typical cases.

With regard to the etiology there are two views. According to Reverdi and Cerré the cause is traumatic displacement of bits of epidermis into

the subcutaneous tissue while according to Pels-Lerden and Horn, it is an injury of the sebaceous and sudoriferous glands and the hair follicles around a foreign body which has entered from the outside. The theory of Reverdin and Garré explained all of the author's cases except two.

Blond does not consider it justifiable to deny the existence of traumatic dermoids and to regard all dermoids as congenital. Traumatic dermoids may occur in almost any part of the body. The belief that they seldom appear elsewhere than on the palm of the hand is to be explained on the basis of an incorrect diagnosis of atheroma, fibroma, etc.

The author proposes substitution of the term "traumatic epidermoid" for the term "traumatic epithelial cyst." So do (2).

GENERAL BACTERIAL INFECTIONS GENERAL MYCOTIC INFECTIONS

Regan, J. C. The Treatment of Cutaneous Anthrax, with Few Remarks on Prophylaxis. *New York State J. M.* 9:3 1901: 3.

Cutaneous anthrax is disseminated among animals by the products of animal life, the urinary and fecal discharges, the hair and hides of infected animals, and the cadavers of animals which died of the disease or harbored anthrax bacilli in their hair.

The anthrax bacillus readily produces spores and these may remain a potential source of infection in the soil for years. Cattle pasturing on such lands become infected.

The measures for prevention comprise: (1) the burning of infected carcasses of animals dying of the disease; (2) destruction of the virus by proper drainage and cultivation of the soil; and (3) proper disinfection of all imported hair and hides, including the proper disposal of all ant matter, mud and drainage water from tanneries; and (4) the prevention of outbreaks of anthrax by thoroughly immunizing all susceptible or exposed animals by means of anthrax vaccine.

Human infections, especially in the form of cutaneous anthrax or malignant pustule, are almost always contracted from animals directly or from animal products such as the hide or hair.

Early diagnosis is of the utmost importance. Thermocoarctation should not be used. Chemical caustics are also contra-indicated. The severity of the method the pain produced the subsequent development of more local edema, the indiscriminate destruction of both dead and living tissue and the prolonged convalescence renders these methods undesirable.

Of the surgical measures for anthrax incision is the oldest but now general disfavor. The method most commonly used at present is excision but this has limitations and disadvantages which make it inappropriate if there is another method which is reliable applicable to all cases, not less severe.

Anti-anthrax serum was originally produced by Marchoux of France and Sclavo of Italy in 1895 by

immunizing sheep. The relatively few failures in the use of this serum can be traced to: (1) its use too late in the course of the disease after a septicæmia had supervened or within twelve to twenty-four hours of death; (2) the employment of too small doses—20 to 30 c.c.m.; (3) failure to repeat the injections frequently (in many instances only one dose was given and that subcutaneously); (4) its use for patients with chronic diseases such as myocarditis, nephritis, syphilis, etc.

Regan contends that other local methods should not be used in conjunction with serum. Either they are inefficient or so radical that there is danger of further local involvement or septicæmia.

The author has devised the local injection of anti-anthrax serum. For giving these injections a 2 to 5 c.c.m. Luer syringe fitted with a fine needle is used. After the application of iodine to the skin the needle is inserted into the indurated border of the pustule and directed fairly deeply (from 2.5 to 3.5 c.m.) into the subcutaneous tissue at the base of the lesion. From 5 to 1 c.c.m. of serum is then given depending on the size of the lesion, the needle being inserted twice or three points and the serum injected so as to circumscribe the pustule. The injections are given once or twice in twenty-four hours in mild or moderate cases, and every six to eight hours in more severe cases.

Following such local injections the lymph secretion in the region of the pustule contains a high antibody content. The type of the local inflammatory reaction is peculiar. The serous discharge from the pustule is characteristically poor in leucocytes, and microscopic sections of the lesion show a strong tendency of the bacilli to collect in the center of the pustule, the leucocytes being distributed as a dense infiltration around the margins of the lesion and of the subjacent cellular tissues. Probably this is due to negative chemotaxis. Since the serum has a marked effect in facilitating phagocytosis it is logical to supply it in concentrated form at the site of the infection.

The local injections must be supplemented by general administration of the specific agent by the cutaneous, intravenous, or intramuscular routes.

In mild cases (about septicæmia) the dosage varies from 40 to 5 c.c.m. every twelve to twenty-four hours. The first few injections are intravenous while those given later are intramuscular and subcutaneous. In moderate cases 50 to 100 c.c.m. are given intramuscularly first for three or four injections every eight to twelve hours, and then small doses are given by intramuscular and subcutaneous injection. In severe cases, 80 to 100 c.c.m. (or even 200 c.c.m.) are given intravenously every six to eight hours for five or six more injections, until the disease is controlled, when the intramuscular and subcutaneous routes may be used. In cases with septicæmia the dosage must be very high (from 15 to 200 c.c.m. given every three to six hours).

The appearance of serum rash several days after the injection is fairly common. It is desirable to

test the patient out for sensitization by cutaneous test and if a reaction is obtained desensitize before giving the injection. The first few cubic centimeters should be allowed to enter the skin very slowly and should be well diluted with normal saline. The rest can then be given undiluted.
MORAN H. K. JR. M.D.

White P. A. Actinomycosis: Diagnosis and Treatment. *J. Amer. Med. Assn.* 9:3 Jan. 95
In the Western and Northwestern states it is important that actinomycosis be pathologically identified. Of 5 collected cases about 40 per cent came from these states.

The disease occurs commonly in cattle but is known to jump to man. Sixty per cent of the cases of actinomycosis in man are those of farmers. These facts indicate that there is either direct interference from animals or indirect inoculation by means of some material such as grasses or grains contaminated by manure.

The lesions may occur in almost any part of the human body. The head and neck are involved in over 60 per cent of the cases.

A definite clinical diagnosis of actinomycosis is often difficult, especially if the case is seen early or late. In early cases the condition is difficult to distinguish from tuberculosis of the glands. Hordtgen's disease, sarcoma or simple phlegmon. Practically the diagnosis is made by finding the coccoid bodies in the purulent discharge from an abscess, ulcer or opening.

For the treatment, numerous drugs have been advocated, copper salt mainly and externally, methylene blue internally and injected into the

tissues and sinuses. Autogenous and polyvalent stock vaccines have been used and supplemented by surgical treatment. Roentgen rays and radium the rays have yielded some successful results. In 11 cases arsenphen meningitis produced results. Incision of the abscess, draining the cavity with iodine and picking the iodiform gauze is an effective method.

In chronic cases the patient should be told that the condition is prone to recur and spread that other abscesses may appear, and that treatment will necessarily be prolonged. A acute case with definitely localized abscess usually heal permanently without recurrence after the usual treatment.

SMITH KARY M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

Reiser V. D. A Rapid Technique for Preparing Histologic Sections by the Paraffin Method. *J. Am. Med. Assn.* 9:3 Jan. 690

The method described depends primarily on hastening the dehydration process by the use of hot acetone. In the author's laboratory this is accomplished by placing the fixed tissue in 30 cc. specimen bottle of thick glass, adding about 5 cc. of acetone, clamping the cork in place and then putting the bottle in the paraffin oven at 60 degrees C. for 1 hour. At the end of this time the dehydration process is completed, evidenced by the breaking of turbidity on the addition of more acetone. As acetone is most inflammable as alcohol the pressure of the flask must not be opened near a flame.

J. C. ROBERTSON M.D.

BIBLIOGRAPHY of CURRENT LITERATURE

NOTE.—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THIS COPY ON WHICH A SHORT ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

SURGERY OF THE HEAD AND NECK

Head

- A case of cranio-cleido dysostosis A B COCKER and H B SIMS *Lancet*, 9 3 cci 595
Osteoma of the skull report of 14 cases, one being associated with large intracranial radiofibrous C W RAYD *Arch Surg*, 9 3 vi 573 [1]
Surgical and results in general, with case of enormous hemangioma of the skull in particular H C SERRA *Surg Gynec & Obst*, 923, xxxvi 303
Depression of the cranium: aphasia operation, recovery P J TRUCCI *Rev Assoc med argent*, 9 xxxv 993
Plastic repair of the skull by teguous bone grafts following compound depressed fracture S ZILLOVA *Chirurgia* [M 923, vi 9
Late result of craniectomy for depression causing hemiplegia C I ALLISON *Rev Assoc med argent*, 9 xxxv 988
Intracranial serocele W WHEELER and E C SMITH *Brit M J*, 9 3, 4, 360
Traumatic intracranial serocele W WHEELER *Lancet*, cxxv, 580 [2]
The nature of cranial hyperostosis overlying an endothelial bone of the meninges D B PHILLIPS *Arch Surg*, 9 3, vi 554 [2]
Complete separation of the facial bones from the base of the skull A ASPHALL *Med J Australia*, 9 3, 39
The law of leverage in crushing spinal work on the vertebrae of the bones of the face and head G C SMITH *Internat J Orthodont Oral Surg & Radiography*, 923 ix
Plastic repair of the face and limbs J J M SM *Brit M J*, 923 4, 5

Eye

- Congenital anophthalmos with report of case U C BOON *J Oklahoma Med M Ass*, 9 3 xiv 65
Unilateral anophthalmos clinical report of 61 cases C H FRASER and J M HODGKIN *Surg Clin N Am*, 923, vi 28 [2]
The importance of radiography in doubtful cases of optic atrophy with special reference to retinitis disease R E WRIGHT and T W BARNARD *Brit J Ophthalm*, 9 3, 4 [2]
Some eye data of interest to the general practitioner H L GOWEN *Habermas Month*, 9 3 lvi, 85
Some practical points on refraction C D WESCOTT *Am J Ophthalm*, 9 3, i, 204 [2]
The therapeutic use of cal. tropine solution in amblyopia W J GARRETT *Arch of Ophthalm*, 9 3, lii, 60
Three cases of amblyopia treated by psychotherapy W B LAWCASTER *Am J Ophthalm*, 9 3, vi 6
Headache from the ophthalmological standpoint J M GIBSON *Pennsylvania M J*, 9 3, xxi 350 [2]

- Visual hygiene and prophylaxis J GREEN J and J F HARDISTY *Ophth Lit*, 9 2, xviii, 573
The Ladd-Franklin hypothesis of color vision H HARJIDGE *Brit J Ophthalm*, 9 3, vi, 39
Ocular lesions produced by lightning S CECILIA BRAUN *Med*, 9 3, xxxvi, 83
The treatment of eye injuries, with use of the conjunctival flap, in perforations O I GREEN *J Oklahoma State M Ass*, 9 3, xvi, 6
General pathology E HILL *Ophth Lit*, 9 3, xvii, 539
General diseases with ocular involvement B W KEY *Ophth Lit*, 9 3, xviii, 543
Some observations on eye lesions of nasal origin J D HENDERSON *South M J*, 9 3, xvi, 8 [4]
The practical value of the ophthalmometer O OLIVER *Ann Am J Ophthalm*, 9 3, vi, 5
A plea for more general use of the cross cylinder W H CHASE *Am J Ophthalm*, 9 3, 4, 209
Operation for palpebral ptosis E CAMPOS *Brasil med*, 9 3, xxxvii, 85
Gonorrhea of the internal palpebral commissure simulating an epithelioma M M AMA *Siglo med*, 923, lxx, 54
Rev med de Sevilla, 9 3 xlii
Diseases of the eyelids F M SCHNEIDERMAN *Ophth Lit*, 9 3, xviii 458
A case of alveolar blepharitis or ciliary folliculitis due to staphylococcus infection A F ALMO *Brasil med*, 9 3, xxxvii, 59
The incubation period of trachoma H GIFFORD *Ann J Ophthalm*, 9 3, 4
A myxoma occurring near the lacrimal sac GICE STOK and V CHA PRYARD *J de med de Bordeaux*, 9 3, cxi, 64
The lacrimal apparatus M WEEVER *Ophth Lit*, 923, xviii, 445
Malignant lymphoma of the lacrimal gland L M FAIRBANK *Am J Ophthalm*, 9 3, vi, 8
Conjunctivitis of the tarsus and giant papillae cured with radium treatment M AM *Rev med de Sevilla*, 9 3, xlii, 7
Vernal conjunctivitis A G FORT *J Med Ass Georgia*, 9 3, xii
Pneumophagous conjunctivitis report of case C STOCKARD *J Med Ass Georgia*, 9 3, xii, 95
Report of case of melanosis of the conjunctiva A S FRAZER *Arch Ophthalm*, 923 lii 68 [4]
Corneal deposits of cholesterol and lime salts dissolved by alcohol L F LOVIE *Am J Ophthalm*, 9 3, vi, 74
Corneal ulcer cured by tonolactone report of case C B WILLIAMS *J Am M Ass*, 923, lxxx, 97
Operation for pterygium A FIALDO *Brasil med*, 923, xxxv, 29
Tuberculin as therapeutic agent in certain forms of keratitis W G REIDER *Illness M J*, 9 3, xliii, 24 [4]

- A case of mesoblastic leucocystoma of the iris F H VERNER Arch Ophthalm 93, 12, 132 [4]
 Spontaneous luxation of the crystalline lens A FIALDO Brasil med 93, xxxvii, 14
 Cataract after thyroidectomy A VAN LEST Bruxelles med 93, vi, 486
 Blocking the main trunk of the facial nerve in cataract operations R E WALSH Arch Ophthalm 93, 12, 66
 Factors of safety in the operation for cataract J GREER, J J MASON State M Ass 93, 22, 83
 Cataract extraction and complications W F HUGHES J Indiana State M Ass 93, xvi, 79
 Interesting experiences in cataract extraction among Confederate veterans M ROYCE J Med Ass Georgia, 93, 22, 97
 Cataract extraction in cases suffering from peroxemia anemia J B STANFORD Am J Ophthalm 93, vi, 233
 The extraction of cataract containing foreign body J WOLFE Am J Surg 93, xxxvii, 71
 Lesions of the eyeball and the adjoining parts T B SCHENBERG Ophthalm Let 93, xviii, 32
 The orbital and orbital disease W L BUCKNER Ophthalm Let 1933 xviii, 477
 Oil cyst of the orbit A KRAFF Arch Ophthalm 93, 12, 163
 Tumors and cysts arising near the per of the orbit W L BUCKNER Am J Ophthalm 93, vi, 83 [4]
 Neurofibroma of the orbit E STICKER Am J Ophthalm 10, 2, vi, 76
 Tuberculosis of the orbital cavity D RAY Arch Ophthalm 93, 12, 147
 Tumors of the eyeball and orbit J M GIFFORD Ophthalm Let 93, xviii, 499
 Ocular parasites J M SMITH Ophthalm Let 93, xviii, 518
 The significance of the tuberculin reaction and other problems in ocular tuberculosis W H LUTHER Am J Ophthalm 93, vi, 16
 Glaucoma surgery M GOLDENBERG Illinois M J, 93, xlii, 9 [4]
 Retrobulbar optic neuritis in posterior synechia E B DIMARIA and J LAYENA Rev Assoc med argent 1932, xxxv, 769
 Occlusion of the central retinal artery F F AOKI J Los State M Soc 93, xii, 83
 Discussion of the differentiation and prognosis of arteriosclerotic and renal retinitis H B SRAW R F MOORE, P BARNLEY and others Arch Ophthalm 93, 12, 8

Ear

- Dilatation of the lobes of the ear E FETTER Wren med Wchnsch 93, lxxii, 55
 The pathological and clinical aspects of deaf mutism J S FRANK Laryngoscope, 93, xxxii, 77 [8]
 Ot rhinolaryngeal affections of the endocranium J DE LA C CORREA and R BRICO Semana med 93, xii, 1
 Headache from the standpoint of the otologist O W MACDONALD Pennsylvania M J, 93, xvi, 360
 Some cases of otosclerosis with an unusual symptom (otosclerosis paradoxica) A E GRAY Proc Roy Soc Med Lond 93, xvi, Bert Otolary 9
 The effect of small doses of roentgen rays in certain forms of impaired hearing D C JARVIS Am J Roentgenol 93, x, 207 [4]
 The treatment of defective hearing by small doses of X rays J McCoy Am J Roentgenol 93, x, 203 [4]
 Diptheritic otitis media W J MILLINGTON Calif Sta M J 93, xii, 51

- The management of discharging ears in children E BORN Canadian M Ass J 93, xii, 75- [4]
 The therapeutic problems of acute middle ear infection M F MCCARTHY Kentucky M J 93, xii, 140 [4]
 An unusual case of mastoiditis T K HOGGINS Vt med M Month 93, xlii, 796
 Acute mastoiditis with facial paralysis and remittent meningitis A ROY N York M J & Med Rec 1932, cxvii, 265
 The technique of radical mastoidectomy F E HARTY South M J 1932, xvi, 227

Nose

- Transmastic development of rhinolaryngology H E BICKERT Laryngoscope, 1932, xliii, 6
 A rare malformation of the ale nose T OY LITNER MASH Klin Wchnsch 93, 2, 307
 The value and ultimate fate of bone and cartilage transplants in the correction of nasal deformities W V CARTER Laryngoscope, 93, xliii, 96 [7]
 An instrument (drill) to facilitate the correction of certain types of external deformities of the nose S ISRAEL J Am M Ass, 93, 12, 690
 Berings and malocclusion growth of the nasopharynx and their treatment with radium S J CAHO and J W HALLOW Arch Surg 93, vi, 439
 Report of case of granuloma nasale W H GOSWORTHY J Michigan State M Soc 93, xii, 22
 Headache from the standpoint of the rhinologist O W MACDONALD Massachusetts M J, 1933, viii, 77
 Headache from the standpoint of the rhinologist O B JONES Pennsylvania M J 1933, xvi, 36 [7]
 Bone relations of the nose to the eye and ear B F ANDREWS Illinois M J 1932, xlii, 95
 The symptoms and treatment of deviations of the nasal septum M E LAMONTE Illinois M J 93, xlii, 206
 Surgical treatment of nasal fissures A THORP Spectator, 93, xlii, 314
 Opening of the sphenoidal sinus by the endoscopic route J ROBERT Presse med, Par 93, xlii, 302
 Cerebrospinal rhinorrhea report of case J E LOTTUS J Am M Ass, 1933, lxxii, 84
 Contributions to the diagnosis of subacute and chronic inflammatory lesions of the mucosa lining the secondary nostril of Highmore W SPILLMAN Laryngoscope, 1932, xliii, 203
 Palmarily sequel of oral and nasal operations C C BAYNE Northwest Med 93, xii, 9

Mouth

- The technique of oral radiography C O SUGGROVE Internat J Orthodont Oral Surg & Radiography 93, 12, 36
 Ultraviolet in oral surgery A J PACY Internat J Orthodont Oral Surg & Radiography 93, 12, 7
 The early treatment of malocclusion L C READ Internat J Orthodont Oral Surg & Radiography 93, 12, 75
 Some advantageous methods of applying the buccal arch W J BELL Internat J Orthodont Oral Surg & Radiography 10, 2, 70
 Advantages of lingual appliances when indicated, and the ideal age for their application in disocclusion cases P T MEYER Internat J Orthodont Oral Surg & Radiography 93, 12, 67
 Congenital perforate soft palate and double uvula, its repair of perforation J H TERTON J Am M Ass 93, lxxii, 914

- Notes on short experiment in the treatment of oral cancer. F M ANASIS Rhode Island M J 19 2, vi, 43
- Amphibian treatment of sporadic gingivitis. J A KOSKIE Am J Clin Med 913, xxx, 243
- Infection and inflammation of the investing tissues of the teeth and their relation to the maxillary sinus. G B BROWNE Kentucky M J 1975, xii, 140 [8]
- Chronic inflammation of the parotid. K VOZZLER Arch f klin. Chir 913, cxxx, 655
- A feather in the parotid coat. J DUNDAS GRANT Brit M J 913, 1, 4, 6
- Parotid cystadenoma of the parotid region. S MAZZA and A CASARELLI Rev Assoc. med argent 913, xiv, 967
- Deformities of the lips and their correction. P CATTANI Schweiz med Wochenschr 913, lvi, 85
- Harsh W E Lano Boston M & S J 913, clxxxviii, 790
- The surgical treatment of cancer of the lip. R R VIL LIGAS Scand med 913, xxx, 398
- The surgical treatment of carcinoma of the lower lip. W E LIGANOV J Missouri State M Ass 913, xi, 90
- Acute pyogenic infections of the jaw not associated with pulpless teeth. L R CARL Dental Cosmos 913, lxxv, 17
- A case of syphilis of the mandible complicated by nose. G PLOT and C RUTER Presse med. Par 913, cxxx, 223
- Periosteitis of the mouth and throat. J COLEMAN Med Times 913, li, 73
- Cancer of the mouth and jaws. V P BLAIR and M J MONTGOMERY Internat J Orthodont Oral Surg & Radiography 913, ix, 1
- Lingual garter. F H LANEY Surg Gynec & Obst 913, cxxvi, 395
- Lymphadenoma circumscription of the tongue. G PATTI Proc Roy Soc Med Lond 9 3, xvi, Sect. Der. med 53
- Various methods of treating cancer of the tongue. J BERRY W H CLAYTON GIBBY A E H PUGH and others. Lancet 913, cxxv, 435 [8]
- A case of adenomatosis. H WINTER Arch f klin. Chir 913, cxxx, 567

Throat

- Typical quincy in an infant. F W GRAY N York M J & Med Rec 1975, cxxx, 367
- Report of case of safety pin in the trachea. R S MOORE Laryngoscope 1913, cxxxiii, [9]
- Maintaining the patency of the larynx after laryngectomy in the operative correction of bilateral paralysis and in other cases. A RIFKIN Ztschr f Laryngol Rhinol etc 913, xli, 84
- Neo-diphtheritic laryngeal stenosis resulting from an acute infectious disease. F MICHAELIS Riforma med 913, cxxx, 245

Neck

- Tuberculous cervical adenitis in children. J S STOVES Boston M & S J 9 3, clxxxviii, 72
- Hydatid cyst of the neck. M ROMEO Scand med 913, xxx, 4
- A note on the carotid gland. DUBROV, MAREL, and LA COSTE. J de med de Bordeaux 913, xcv, 305
- Palatized thyroxine—chemical findings in series of cases. J P PARSONS Med Clin N Am 913, vi, 39
- Primary tumor of the thyroid associated with tuberculosis. H C SWEENEY J Am M Ass 913, lxxx, 754

- The relation between the thyroid and intestinal movements. G DUBROV Verhandl d deutsch Gesellsch. f. Inn Med 9 3, 373
- The influence of intestinal bacteria upon the thyroid gland. D J HARRIS Brit M J 1913, 1, 553 [9]
- Thyroid metastasis. A KORNDOFFER Hahnenman Month 913, lxxvi, 57
- The diagnosis and treatment of thyroid disease as controlled by the metabolic rate. A H ROWE Endocrinology 913, vii, 356
- The value of basal metabolism studies in thyroid disease. J H SARTON Virginia M Month 9 3, xliii, 703
- The value of basal metabolism in the diagnosis and treatment of cretinism. F B TALBOT and M E MONTAGNY Am J Dis Child 913, xiv, 85
- Observations of the cardiovascular system in thyroid disease. W J KIRK and G C HERBERT Arch Int Med 913, cxxii, 398
- Clinical studies in functional disturbances. The recognition and treatment of hypothyroidism. A P MILLER and B D. BOWEN N York State J M 9 3, cxxx, 94
- Substernal thyroid with bilateral laryngeal paralysis. L HUNTER J Am M Ass 9 3, lxxx, 543
- Interthoracic goiter—case report. W D HADLEY Connecticut M J 9 3, iv, 40
- Simple goiter as result of iodine deficiency preliminary paper. J F MCCLENDON and A. WILLIAMS J Am M. Ass 913, lxxx, 600
- Iodine therapy in endemic goiter and its history. E BACHNER Schweiz med Wochenschr 19 2, li, 713 [10]
- Acute yellow atrophy associated with hyperthyroidism. W J KIRK and G Y RYCK Med Clin N Am 9 3, vi, 445
- Cystic tumors of the thyroid. J L DeCOURCY Connecticut M J 1913, iv, 29
- Intratracheal struma. L PETER Beitr path Anat allg Path 913, lxx, 474
- Studies of Graves' syndrome and the involuntary nervous system. I. KIRK, C C LEE, and H T HYMAN Am J M Sc 19 2, clxxv, 344
- Studies of Graves' syndrome and the involuntary nervous system. II. Thyroid enlargement in individuals without symptomatic manifestations. L KIRK and H T HYMAN Am J M Sc 913, clxxv, 357
- Studies of exophthalmic goiter and the involuntary nervous system. III. A study of fifty consecutive cases of exophthalmic goiter. L KIRK, C C LEE, and H T HYMAN, and H LACROIX Arch Int Med 913, xxi, 433 [10]
- The relative value of surgery and the roentgen ray in the treatment of hyperthyroidism. E P RICHARDSON J Am M Ass 913, lxxx, 890
- Further observations on the roentgen ray treatment of toxic goiter. J H MYERS and G W HODGINS Arch Int Med 9 3, cxxx, 303
- Recurrent goiter. ECKHART and HITLER Beitr klin Chir 913, cxxvii, 556 [10]
- Metastatic so-called benign goiters latent thyroid carcinoma producing metastases. E DELAVOY and A DRALEUX Arch franco-belges de chir 19 2, xiv, 647 [11]
- Observations on thyroid gland implantation. N ARAMATU Arch f path Anat etc 9 3, cxxx, 556
- Indications for operation in goiter. M LEBACHY Munchen med Wochenschr 9 3, lxx, [11]
- Regional anesthesia of the neck and upper extremity critical and complete review of methods. BACIV and V. MOUTOT Arch. franco-belges de chir 913, xiv, 608 [11]
- Surgery of the thyroid. T A CARTER Am J Clin Med 1913, xxx, 169

- The calcium content of the blood of thyrotoxic animals. M. PARRON. *Endocrinology* 9:3, vii, 3.
- The mortality rate following operations on the thyroid gland. C. H. MAIRO and W. M. BOOTHBY. *J. Am. M. Ass.* 9:3, lxxx, 80.
- Cyst of the epiglottis with unusual features. H. M. TAYLOR. *N. York M. J. & Med. Rec.* 9:3, cxvii, 357. [11]

- External cricothyroid: its control through the nasal ganglion. G. SUTHER. *J. Am. M. Ass.* 9:3, lxxx, 600.
- Neoplasms of the larynx. C. M. ROBERTSON. *Illness M. J.* 9:3, xiii.
- Operation of total laryngectomy for the cure of intrinsic cancer of the larynx. J. MCKINNEY. *Ann. Otol., Rhinol. & Laryngol.* 9:3, xxiii, 61.

SURGERY OF THE CHEST

Chest Wall and Breast

- A singular abscess of the costal cartilage. H. HART. *Zentralbl. f. Chir.* 9:3, 333.
- Radical operation for chronic emphysema. C. ECKHART. *Ann. Surg.* 9:3, lxxvii, 327. [12]
- Sudden death following thoracostomy. E. S. DUBRA. *Am. J. M. Sc.* 9:3, cxv, 357. [14]
- A report on twelve cases of postoperative abscess of the lung and two cases of postoperative pneumonia. H. L. BARNES. *Rhode Island M. J.* 9:3, 35.
- Diffuse mammary hypertrophy in puberty. A. HERTZ. *Zentralbl. f. Gynaek.* 9:3, xiv, 563.
- Plastic mastitis in cases of cancer of the stomach. H. STARK. *Zschr. f. Krebsforsch.* 9:3, xix, 3. [15]
- Rivanol treatment of mastitis. P. ROSENSTEIN. *Zentralbl. f. Gynaek.* 9:3, xiv, 80.
- Traumatic fat necrosis of the breast. I. COHEN. *J. Am. M. Ass.* 9:3, lxxx, 770.
- Teratoid mixed tumors of the breast. M. A. McILVA. *Ann. Surg.* 9:3, lxxvii, 354.
- The etiology of cancer of the breast in the male. A. MULLERBERG. *Arch. f. Klin. Chir.* 9:3, cxv, 666. [16]
- The prognosis in cancer of the breast. H. C. SALTZSTEIN. *Am. J. M. Sc.* 9:3, cxv, 434.
- The value of roentgenography before operating upon breast malignancy. J. W. FRANK. *Häkeness. Month.* 9:3, lxxii, 145.
- Radiation therapy in breast cancer. G. E. FRANKEL. *Fortschr. d. Geb. d. Roentgenstrahlen*, 9:3, xix, 46.
- Higholtage therapy in the treatment of carcinomas of the breast. J. ASHLEY. *Northwest Med.* 9:3, xix, 85.

- Abscess of the lung. N. W. GARDEN. *Ann. Surg.* 9:3, lxxvi, 370.
- A case of suppurative of the lung. F. GARDNER. *Scandinav. med.* 9:3, xxx, 590.
- Artificial pneumothorax. L. OT. *Mutual. Berlin.* Springer 1923.
- Pneumocopy and drainage of intrapleural abscesses in the production of therapeutic pneumothorax. C. A. PROCTOR and A. GIRAUD. *Presse med. Par.* 19:3, xxxi, 566.
- A detail of technique in Forlanini's method of producing pneumothorax. M. BALASANO. *Policlin. Rome*, 9:3, xvi, 500, 501, 502.
- Artificial pneumothorax: its application to cases other than those of pulmonary tuberculosis. J. J. PIERCE and L. S. T. BURKELL. *Lancet*, 9:3, cxv, 476. [16]
- Pneumocopy as therapeutic measure in pulmonary tuberculosis. H. ALEXANDER. *Klin. Wchenschr.* 9:3, x, 404.
- Surgical treatment in pulmonary tuberculosis. E. RABIN. *Wien. med. Wchenschr.* 9:3, lxxx, 666.
- Surgery in the treatment of pulmonary tuberculosis. C. RIVIERE and W. H. C. ROBERTS. *Lancet*, 9:3, cxv, 53. [16]
- The surgical treatment of tuberculosis of the lungs. F. SAUNDERS. *Wien. med. Wchenschr.* 9:3, lxxx, 665. [17]

Heart and Pericardium

- Calcific pericarditis diagnosed by X-ray examination. L. CANTARINI. *Presse med. Par.* 9:3, xxxi, supp. 493.
- Pericardocyst pericarditis. S. F. McDONALD. *Med. J. Australia*, 9:3, 3, 302.
- The intracardiac injection of adrenalin. C. BOOBY. *Lancet*, 9:3, cxv, 580.

Esophagus and Mediastinum

- Extraction through the stomach of foreign body wedged in the esophagus. W. ANSCHUTZ. *Therap. d. Gegenw.* 9:3, lxxv, 6.
- A wire ring in the esophagus. E. G. GILL. *Laryngoscope*, 19:3, xxxiii, 5. [17]
- Esophageal diverticulum, retrosternal goiter and blood ring gastric ulcer in the same patient. HANSEN. *Arch. f. Klin. Chir.* 9:3, cxvii, 760.
- A case of diverticulum of the esophagus. L. C. KIRBY. *Boston M. & S. J.* 9:3, cxviii, 96.
- Esophageal diverticulum. F. H. LARLEY. *Boston M. & S. J.* 9:3, cxviii, 355. [17]
- The treatment of diverticulum of the esophagus. C. H. MAIRO. *Ann. Surg.* 19:3, lxxvii, 367. [18]
- The metastasizing tendency of esophageal carcinomas. G. F. HALLISTON. *Ann. Surg.* 9:3, lxxvii, 17.
- New details concerning the mechanism of the physiological tube, the esophagus, and the physical tube, rational gastroscopy of new type. W. STEINBERG. *Zentralbl. f. Chir.* 9:3, 7.
- Total esophagectomy. J. A. KOWSKI. *Festschr. 19:3, 1, 126.* [18]
- A case of foreign bodies in the trachea. F. KRAH. *Dtsch. sch. med. Wchenschr.* 9:3, xix, 140.
- Sudden death from blocking of the air passages by carcinoma gland in boy of 9 years. F. J. PORTER and W. WILLIAMS. *Brit. J. Child. Dis.* 9:3, xi, 26.
- Foreign bodies in the air and food passages. C. A. S. RIMOUT. *Brit. M. J.* 9:3, 1, 43.
- Tracheostomy in an infant. E. THORP. *Lancet*, 9:3, cxv, 504.
- Acute suppurative pleurisy: an analysis of ninety-four cases. C. H. PIERCE and H. W. CAYE. *Surg. Gynec. & Obst.* 9:3, xxxvii, 357. [18]
- The technique of pleural puncture. HANSEN. *Monatsschr. med. Wchenschr.* 9:3, lxxv, 70.
- Primary cancer of the pleura in man and dog. A. JOHNSON. *Acta med. Scand.* 19:3, suppl. 10, 30.
- Four cases of bronchoecopy including two of lung abscess. R. H. CRAIG. *Canadian M. Ass. J.* 9:3, xix, 85.
- Abscess of the lung occurring after lobectomy: a case report. J. R. PEARSON. *Kentucky M. J.* 9:3, xix, 22.

Idiopathic dilatation of the oesophagus associated with mega-oesophagus C CASTELLI *Riforma med* 9 3, xxvii, 70

X-ray examination of the posterior mediastinum K SCHWELTZ *Röntgenologie* 9 2, 1, 9
 Histology of the mediastinal glands and lympho-sarcoma L M WARFIELD *Med Clin N Am* 9 3 vi, 997

Miscellaneous

Intraabdominal catastrophes simulating the acute abdomen J H PARVOIX *Lancet* 9 3 cxv 370 [18]
 New growths within the chest X ray diagnosis S B CAMINS *Am J Roentgenol* 9 3, x, 75 [18]
 New growths within the chest J V HALL *Am J Roentgenol* 9 3 x, 8 [18]

SURGERY OF THE NERVOUS SYSTEM

Brain and its Coverings; Cranial Nerves

Brain injuries without skull fractures D H MORROW *Ohio State M J* 19 3, xvi, 57 [21]
 Observations regarding the condition of traumatic cerebral edema W SWARDE *Am J M Sc* 9 3 cxv 405
 Late result of craniectomy for depression causing hemiplegia C I ALLRODE *Rev Assoc med argent* 9 xiv 958

The use of air in the diagnosis of intracranial lesions an illustrative case F C GRANT *Surg Clin N Am* 9 3, iii, 969 [21]
 Accroche of the brain with report of cases A D Mc CANNEL *Laryngoscope* 9 3, xxviii, 80 [21]
 Intracranial accroche W WHEELER and F C SMITH *Brit M J* 9 3, 4, 560

Epileptic crises from an excystosis of the inner table of the frontal bone P MAURIC *J de med de Bordeaux* 9 3, xiv, 6
 Recurrent rava and epilepsy M FRANKEL *Zentralbl f Gynak* 9 3, xlvii, 365
 Roentgenological observations on the treatment of epilepsy with intracranial irradiation of one adrenal gland H KUTZLEIN *Arch f Psychiat Nervenkrankh* 9 lxvi 79 [22]

Surgical reconstruction of the anatomical crineo-cerebral layers in the treatment of traumatic Jacksonian epilepsy G GROSS *Pobeda Rome* 9 3, xxx, sec. I, 144
 The surgical treatment of epilepsy L PLENER *Klin Wchnsch* 9 3, 4 [22]
 The results of palliative trephination in brain pressure A SCHULTZ *Deutsche med Wchnsch* 9 3, ii, 1406 [22]

Ventriculocyst and puncture of the floor of the third ventricle W J MITCHELL *Boston M & S J* 9 3, cxviii, 77 [23]

Brain tumors with exhibition of specimen case report L W FRANK *Kentucky M J* 9 3, xxi, 99
 A diagnosed case of dermoid cyst of the brain G SCHULTZ *Gyngnastik* 9 3, 44

Tumor in the cerebra magna J P MARTIN and J G GREENMAN *Proc Roy Soc Med Lond* 9 3, xvi, Sect. Neurol 3 [23]

Some of the surgical problems in the management of pituitary disorders C H FRAZER *Surg Clin N Am* 9 3, iii, 35 [23]

Hypophyseal duct tumor in child of ten T H LAMMAY and L W SARRIS *Surg Gynec & Obst* 9 3, xxvii, 36 [24]

Frontal corpus striatum syndromes L A HOGAN *Med Clin N Am* 9 3, vi, 96

The frontal lobe acting upon certain cerebral affections I HOGAN *Acta med Scand* 9 3, lvi, 66
 A glioma involving the orbit C J ADAMS *Am J Ophth* 9 3, vi, 22

Leitargic myoclonus Collective Review *Med Sc Abstr & Rev* 9 3, vi, 445.

A myoclonic form of epidemic encephalitis L J TIMMONS and N E MOORE *Med Herald* 9 3, xlii, 78
 Dry brain crass et brain C E REVOLINS *California State M J* 9 3, xxi, 66
 Spontaneous meningeal hemorrhage T F WARD *Rev med d Rosario* 19 xxi, 395 [24]
 The late results of meningeal hemorrhage of the newly born H C CAMEROV and A A OSMAN *Brit M J* 9 3, 4, 563
 A case of middle meningeal hemorrhage A B K WATERS *Lancet* 9 3, cxv 646
 Syphilitic basal meningo-encephalitis H ROVO *Brazil-med* 9 3, xxviii, 5
 Suboccipital meningocoele successfully removed J LITVINOV *Brit M J* 9 3, 4, 566
 Localized meningitis A LITVINOV *Arch Pediat* 9 3, xi, 64

A case of tuberculous meningitis W E GEORGE *Med Press* 9 3, cxv 97
 Internal hemorrhagic pachymeningitis in infancy report of five cases C W BURMAN and H J GILBERT *Kidney J Am M Ass* 9 3, lxxv, 604

The operative treatment of septic meningitis H L MARTIN *Lancet* 9 3, cxv 485 [24]

A case of secondary carcinomatous infiltration of the pia arachnoid of the brain presenting exclusively ocular symptoms during life meningitis carcinomatosa F M M WALKER *Brit J Ophth* 9 3, vii, 5 [25]

Glycemia and glycosuria M POLAKOFF and E DEMET *Presse med Par* 9 3, xxi, 60 [25]

Alterations in the currents and absorption of cerebrospinal fluid following salt administration T E B O'LEARY *Arch Surg* 9 3, vi, 587 [25]

Sugar in the cerebrospinal fluid A preliminary report upon the quantitative estimation of sugar in the cerebrospinal fluid referable especially to epilepsy C D HUNTER *J Indiana State M Ass* 9 3, xvi, 94

Röntgen treatment of rebellious trigeminal neuralgia L BORDONE *L Actinotherapia, Naples* 19 2, ii, 38 [26]

Peripheral Nerves

On the significance of the sequence and mode of development of symptoms as an aid to the diagnosis of multiple sclerosis in the early stages W B CADAWALLADER and J W McCORRELL *Am J M Sc* 9 3, cxv 308

Regeneration of the peripheral nerves in adults M SATTO *Arch d neurol Inst d Wiener Univ* 19 2, xiv 85 [26]

Resection of posterior roots for gastric cramps J A CALDWELL *Cincinnati M J* 9 3, 43

Nervous anastomosis in parabiosis with rats B MORRISON *Klin Wchnsch* 19 3, ii, 30

The treatment of spastic paralysis A S B BANKART *Lancet* 9 3, cxv 537
 A splint for median paralysis W MESSNER *Brit M J* 9 3, 4, 57

Sympathetic Nerves

- The effect of the bilateral section of the superior cervical sympathetic ganglia upon the continuance of life. M. L. MAYER. *Country Radiology* 9 3, vii, 74. [24]
 The trophic functions of the sympathetic nerves. I. BRUNO. *Klin Wochenschr* 9 3, vi, 67. [24]
 Angioplasty in the pathogenesis of the vasomotor trophic neurones: further experiences with periarterial sym-

- pathectomy. F. BRUNO. *Deutsche med Wochenschr* 9 3, vii, 573. [27]
 Angioplastomy operation by the Leriche-Brocage method. C. KERNICK. *Klin Wochenschr* 1913, vi, 337.
 Observations on the case of periarterial sympathectomy. A. FLORENT. *Chirurgie* 9 3, vi, 379. [28]
 The etiology and treatment of perforating ulcer of the foot, with remarks on sympathectomy. M. HARRIS. *Klin Wochenschr* 9 3, vi, 355.

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- Delayed union in non infected wounds about the umbilicus. A. S. BRINKLEY. *Virginia M Month* 9 3, xii, 71.
 The closure, repair and management of cases of post-operative hernia. A. E. BENJAMIN. *Minnesota Med* 9 3, i, 78.
 Translumbar hernia. S. S. GALE. *South M & S* 1913, lixiv.
 Hernia from the employer's standpoint. R. J. GRAVES. *Boston M & S J* 9 3, cxxxviii, 454.
 Strangulated hernia in an infant. I. McNEIL. *Med J Australia* 9 3, i, 315.
 Local and general anesthesia in strangulated hernia. E. F. RICHARDSON. *Boston M & S J* 9 3, cxxxviii, 446.
 A sliding hernia, with the tube as the sliding organ. I. BERNOLD. *Zentralbl f Chir* 19 3, xiv, 270.
 Appendix as the content of hernia on the left side. K. H. FISCH. *Deutsche Zeitschr f Chir* 19 3, cxxxv, 379.
 Inguinal hernia. J. T. BURNES. *South M & S* 9 3, lixiv, 158.
 The relation between oblique inguinal hernia and work men's compensation laws. J. M. WAINWRIGHT. *Arch Surg* 1913, vi, 605.
 Recurrent inguinal hernia. M. BALADO. *Rev Assoc med Argent*, 1912, xiv, 730.
 Splitting the cord in indirect inguinal hernia. C. B. RILEY. *Illness M J* 9 3, xii, 323.
 Operative treatment of very large irreducible hernia. W. DIERX. *Deutsche Zeitschr f Chir* 9 3, cxxxv, 300.
 Calcareous rupture of the rectus abdominis muscle and the epigastric artery. A. WOLGAST. *Arch f klin Chir* 9 3, cxxx, 640.
 The differential diagnosis of tumor in the groin. DELEST. *Med Press*, 9 3, c, cxi, 93.
 Subacute laparal adenitis. F. DEXTER. *Wid and R. F. VACCAREZZA. Scandina med* 9 3, xxi, 79.
 Physiology and pathology of the peritoneum. E. RAYET. *Wien med Wochenschr* 9 3, lxxx, 1479. 547. [29]
 Leucocytes in leucopentostoma. V. GIBSON. *Pediatric*, Rome, 1913, xxi, ser. Chir. 37.
 Chronic subphrenic peritonitis. O. M. ORLANDI. *Arch f klin Chir* 9 3, cxxx, 804.
 J. regard to the employment of ether in peritonitis. C. STERN. *Deutsche med Wochenschr* 9 3, cxxxv, 775.
 Lymphaticocystitis in peritonitis. W. A. COITAN. *Bart's Gynec & Obst* 9 3, cxxxv, 365. [29]

Gastro-Intestinal Tract

- On the interrelation of certain general conditions with gastro-intestinal disorders. T. I. BERRY. *Practitioner* 9 3, cx, 34.
 The retrocolic capsule: means of determining the motility of the gastro-intestinal tract. J. BOCHETTY. *J Am M Ass* 9 3, lxxx, 6.

- Progress in gastro-enterology. A. E. ARTHUR. *Boston M & S J* 9 3, cxxxviii, 59.
 Parameperitonitis in diseases of the digestive tract. V. SOLDEVILLA and J. M. SOLDEVILLA. *Med Ther*, 19 3, vi, 6.
 Evaluation of the factor of spasticity in diseases of the digestive tract. J. KATZMAN. *Med d Gynecol d Med Chir* 9 3, cxxxv, 96.
 Is the stomach locus of infection? N. KOPPELOFF. *Med Press*, 9 3, c, cxi, 94. [29]
 Diaphragmatic hernia of the stomach. F. L. F. ALIAS. *Am J Roentgenol* 19 3, x, 87.
 Review of the operative treatment of gastroptosis and its results. E. WEAVER and H. BOKER. *Muschen med Wochenschr* 19 3, lxx, 5.
 Gastroptosis and its operative cure by simple plication of the stomach. POST. *Muschen med Wochenschr* 9 3, lxx, 5.
 My improved gastroscope. H. ELASER. *Deutsche med Wochenschr* 9 3, xii, 53.
 A method for the operoseal examination of the stomach. S. G. SCOTT. *Arch Radiol & Electrophys* 9 3, cxxxv, 304.
 Fractional gastric analysis. W. D. ROSE. *J Arkansas M Soc* 19 3, xii, 87.
 The modification of gastric function by means of drugs. T. I. BERRY. *Brit M J* 9 3, i, 366. [29]
 Observations on the effect of histamine on human gastric secretion. A. R. MATHESON and S. E. ARROW. *Lancet* 19 3, cxxx, 46. [30]
 The interpretation of certain gastro-enteric symptoms. H. M. ESTERMAN. *Muschen Month* 9 3, lxx, 57.
 Diverticulum of the stomach. E. F. TUPPER. *Wisconsin M J* 1913, xxi, 443.
 Syphilis of the stomach. M. FINARD. *Bruxelles med* 9 3, li, 580. [30]
 The diagnosis and treatment of gastric syphilis. W. A. BRADY and E. ANTONIO. *U S Naval M Bull* 9 3, xvii, 303.
 The surgical treatment of pylorospasm in nervous infants. HILL. *Klin Wochenschr* 9 3, i, 36.
 A case of unusual pyloric obstruction and alkalosis without gastric tetany. J. B. COULMAN. *Med Clin N Am* 1913, vi, 30.
 The occurrence, diagnosis, and medical treatment of hypertrophic stenosis of the pylorus. J. W. ALKNER. *Colorado Med* 9 3, xi, 60.
 The treatment of congenital hypertrophic pyloric stenosis: medicine versus surgery. L. FINELLA. *Brit J Child Dis*, 9 3, xi.
 The surgical treatment of congenital hypertrophic pyloric stenosis. G. B. PACKARD. *Colorado Med* 9 3, xi, 75.
 Pyloric stenosis due to corrosive acids and bly. E. F. FISCHER. *Zentralbl f Chir* 9 3, 65.

- The origin of hunger pains and their significance in the diagnosis of ulcer H SCHUR Wien klin Wochenschr. 9 xxxv 684 [31]
- An early symptom of superficial ulcer of the stomach A NAGY Roentgenologie, 19 1, 36
- The possibility of diagnosing peptic ulcer and its localization from direct and indirect signs H ZIEFFER Med Klin 923, xix, 3
- Perforated ulcer report of case G B LEMMON J Am M Ass 923, lxxx, 775
- Peptic ulcer J M WILLIS Nebraska State M J 923, li, 95
- The surgical aspect of gastric ulcer W H C ROMANS Practitioner 923, cx, 24
- Death after operation for gastric ulcer J DABROWSKA Polska gas lek 92 1, 971
- Leucocytes of the stomach with the report of case F L HOLT Boston M & S J 923, clxxxviii, 349 [31]
- The search for antitoxic products applied to the early diagnosis of gastric cancer F RAYMOND and P ZIEBER Bull et mem Soc med d hôp de Par 9 3 xlvii, 96 [31]
- The importance of radiology in gastric cancer F Z GERSHBERG Semana med 9 3 xxx, 354
- Chemical changes in the blood of the dog after pyloric obstruction R L HANSEN and T G ORR J Exper Med 9 3 xxxvii, 177 [32]
- The possible risk in manipulation of the diseased stomach G B LEMMON J Missouri State M Ass 9 3, xx, 90
- Constriction of the afferent limb between gastro enter oesoph and entero anastomosis P ENKEL Arch f Verdauungsk 9 3, xix, 9
- The diagnosis of constriction of the mesentery E SCHILL Deutsche med Wochenschr. 9 3, xix, 70
- Tumor of the mesentery M SALMON Arch franco belges de chir 923, xxi, 27
- The treatment of chronic intestinal stasis by coloidal kaolin A C JORDA Lancet 923 cxv, 45
- Incarcerated oviduct without retrograde nutritional disturbances of the constraining loop E PÔL A. Zentralbl f Chir 923 9
- A case of invagination of the intestine H THOMSON Upkal f Laryng 9 3, lxxxv, 716
- Intussusception with left sided stasis E D TWYNA J Missouri Stat M Ass 9 3, xx, 90
- Intestinal occlusion resulting from strangulation through defect in the mesentery BOSS Deutsche Ztschr f Chir 9 3, clxv, 454
- A fatal case of acute intestinal obstruction resulting from traumatic diaphragmatic hernia B H SLATER and C MACFARLANE Lancet 9 3, xix, 484
- The typical forms of lat obstruction of the small intestine following suppurative appendicitis A FUCHS Grôsses med 92 xlii, 664 [32]
- The new aspect of structure of the small intestine with peritoneal ascites Upkal f Laryng 923 lxxxv, 140 [32]
- Chemical changes in the blood of the dog after intestinal obstruction R L HANSEN and T G ORR J Exper Med 9 3 xxxvii, 185 [32]
- The therapeutic value of vomiting in intestinal obstruction C FROST Practitioner 9 3 cx, 205 [33]
- Death from intestinal obstruction S PAVLOV Brit M J 923 1, 5
- Three cases of acute inflammatory tumor of the bowels K ANDRASY and K HINDELSBERGER Zentralbl f Chir 19 3, 30
- A technique of end to-side intestinal anastomosis J C BLOCK J de chir 9 3, xxi, 294
- Duodenal motility radiographic observations following the direct injection of barium into the human duodenum H WARDLOW J Am M Ass 9 3, lxxx, 65
- Intestinal obstruction by gall stones C R ARNOTT and E L HOLT Boston M & S J 923, clxxxviii, 300 [33]
- Chronic antenatal enteric obstruction of the duodenum H C TUCKERMAN Boston M & S J 9 3, clxxxviii, 307 [33]
- The normal and pathologic duodenal bulb in the X-ray picture J LOSTKES Fortschr d Geb d Roentgenstrahlen, 923 xxx, 96
- Ulcer of the duodenum inflammation and scarring H ZIEFFER Zentralbl f Chir 9 3, 197
- The mechanical origin of duodenal ulcer C RORER Klin Wochenschr 9 3, xi, 394
- The roentgen diagnosis of duodenal ulcer A PLEN Wien klin Wochenschr 9 3, xxxvi, 145
- The diagnosis of duodenal ulcer by means of rapidly made series of roentgenograms A CANNON and J KELLER Presse med Par 9 3, xxx, 3 [33]
- Roentgen diagnosis in diseases of the duodenum I SAUER Mitt a d Grenzgeb d Med Chir 9 3, xxxv, 335
- The treatment of duodenal ulcer B MOTTOKAN Lancet, 923, cxv, 61
- The technique of duodenal detachment V UTRIV and FORMER Arch franco belges de chir 9 3, xxvi, 93
- Colloid carcinoma of Vater's papilla clinical and anatomical pathological study A ASCHER Riforma med 9 3, xxxii, 38 [34]
- Peptic ulcer of the jejunum and pyloric excision HANSEN Arch f Verdauungsk 923, xxi, 273
- Röntgen ray treatment of extensive ileocolic tuberculous H RIEB Zentralbl f Chir 923 xlix, 66 [34]
- Röntgen observations on the fate of intestinal arrangements of different quantities, especially from the therapeutic viewpoint H LOSTKES Fortschr d Geb d Roentgenstrahlen, xxx, 48 [34]
- Secondary (acquired) intussusception R R ROGERS Ohio State M J 923 xix, 72 [35]
- Palvic megacolon colectomy after invagination of the colon into the rectum J RASHBURN Bruns med 9 3, iii, 36 [35]
- The roentgenological demonstration of multiple diverticula of the large intestine J T CASE Fortschr d Geb d Roentgenstr 9 3, xxx, 43
- Anoctic colitis with perforation J W SUTON and D CAUTIONER Vir Med Henkel 9 3, xlii, 93
- The surgical treatment of chronic ulcerative colitis H B STONE Ann Surg 9 3, lxxxvi, 293
- Intestinal perforation of typhoid origin encysted peritonitis, laparotomy recovery E CHAUVIN Arch franco belges de chir 923, xxvi, 75
- Flexure stenosis S WILKINS Mechanika Rev 9 3, xxxix, 457
- Pathogenic places of the right colon E P QUINN Arch Surg 923 vi, 638
- Fixation of the cecum in chronic intussusception J B Alexander Brit M J 923 1, 508
- A case of developmental alterations of the cecum and pericolic membrane F ALLOIA and A VALLETT Riforma med 923 xxxix, 49 [33]
- Non tuberculous inflammation of the cecum report of case F G KULLOOP Nebraska State M J 9 3, viii, 96
- Physiology and pathology of the appendix H PIAZZO Arch de med cxvii y especial 9 3 2, 358
- Nervous disturbances of appendicular origin FOLNARD CAPLARDU Congr vir, and DERMATOL Spital, 9 xli, 31

The appendix and its rôle as an abscess. *Med Times*, 1923, 4, 57.
 An unusual case of appendicitis. *D C Scott J Roy Army Med Corps, Lond* 1923, 21.
 Appendicitis due to the leishmania. *G L Hartman Kaffel Press med Par* 1923, xxix, 20.
 Appendicitis and the cat. *P Forster Beitr Klin Chir* 1923, cxviii, 277.
 Appendicitis from surgical standpoint. *F Karkhan Berlin Urban und Schwarzenberg*, 1923.
 A case of subomental appendicular abscess of the head of the caecum. *A Strauss Arch f Klin Chir* 1923, cxviii.

The treatment of appendicitis with complications. *E O Schmidt Deutsche Zeitsch f Chir* 1923, cxviii, 3.
 The treatment of ruptured appendix illustrative cases. *F H Greene J Med Ass Georgia* 1923, xxi, 9.
 Carcinoma of the appendix. *A S Jackson Arch Surg* 1923, vi, 623.
 Experimental investigation of volumes of the sigmoid. *Secore A Hertz Arch f Klin Chir* 1923, cxviii, 250.
 Sympatric analgesia in rectal operations. *J F Saper N York M J & Med Rec* 1923, cxviii, 35.
 Some factors in the treatment of extensive anorectal fistula. *L J Hirschman Am J Surg* 1923, xxviii, 56.
 For the treatment of anal fistula. *H Schmidt Med Klin* 1923, xviii, 64.
 Hemorrhoids. *D Zuckerk Med Times*, 1923, 4, 70.
 The injection treatment of hemorrhoids. *W A Hinchell Illinois M J* 1923, xxi, 7.

Liver Gall-Bladder Pancreas, and Spleen

Functional liver tests, an experimental study. *V R Duval and E. A. Graham Surg Gynec & Obst* 1923, xxvii, 348.
 Methods of investigating hepatic insufficiency. *I Oetzel Arch brasil de med* 1923, xxi, 200.
 The value of laboratory tests in diseases of the liver and pancreas. *W L Brown Brit M J* 1923, 4, 46.
 Rupture of the liver tamponade with emetine, cure. *A Kohnsinger Orono belu* 1923, lxxv, 283.
 Hepatitis and cholecystitis of intestinal origin. *M Brull and H Garraux Presse med Par* 1923, xxix, 205.
 Primary anoxic hepatic abscess. *O E Adams Scand med* 1923, xxi, 433.
 Twenty-two of anoxic abscess of the liver treated with emetine. *Hartman Kaffel Rev de med Par* 1923, lxx, 89.
 Twenty-two cases of anoxic abscess of the liver treated with emetine. *Hartman Kaffel Bull et ann Soc de chir de Par* 1923, xxi, 16.
 Portal pyemia secondary to microbial infection. *O B White Brit M J* 1923, 4, 273.
 The collateral circulation of the portal system from surgical standpoint. *E Arvold Rifors med* 1923, xxix, 50.
 Primary carcinoma of the liver. *B J Clawson and V S Canon J Am M Ass* 1923, lxxv, 909.
 Liver abscess; report of 100 operations. *A I Lippes Surg Gynec & Obst*, 1923, xxviii, 356.
 Rupture of the liver with report of case in which autolysis was employed. *C S White Surg Gynec & Obst* 1923, xxviii, 343.
 A substitute for liver hepatic drainage. *R Andrews Zentralbl f Chir* 1923, 60.
 Studies on the total bile. I The effect of operation, exposure, hot weather, relief of obstruction, intercurrent disease, and other normal and pathological influences.

P D McMaster, G O Brown, and P Root. *J Exper Med* 1923, xxviii, 205.
 Studies on the total bile. II The relation of carbohydrates to the output of bile pigment. *P Root, G O Brown, and P D McMaster J Exper Med* 1923, xxviii, 4.
 Pigment metabolism and the Van den Berg test to determine obstructive and non-obstructive jaundice with 51 case reports. *H W Jones Med Clin N Am* 1923, 4, 680.
 Traumatic rupture of the bile passages. *H Rudolph Upsala Lækartidn Föreb* 1923, xxviii, 3.
 Primary cancer of the bile passages. *V Dobrinski Spital* 1923, xxi, 33.
 The identification of the common bile duct in the presence of an anomalous condition of the biliary passages. *J Homan Surg Gynec & Obst* 1923, xxviii, 417.
 White bile in the common duct. *E S Joon and J H L Ns Ann Surg* 1923, lxxv, 28.
 Idiopathic cysts of the common bile duct. *K Zirr Arch f Klin Chir* 1923, cxviii, 63.
 Implantation of biliary fistula into duodenum. *F H Laney J Am M Ass* 1923, lxxv, 803.
 The sodium chloride content of the bile in affections of the gall bladder and bile passages. *L Knorr Beitr Klin Chir* 1923, cxviii, 8.
 Cholecystitis. *O W Root J Oklahoma State M Ass* 1923, xvi, 17.
 Bile-duct anomaly as factor in the pathogenesis of cholecystitis. *M G Strydom Surg Gynec & Obst* 1923, xxviii, 31.
 A comparative study of the series of gall bladder lesions. *J G Clark Surg Gynec & Obst* 1923, xxviii, 325.
 Diverticula of the gall bladder. *G L Abbott Surg Gynec & Obst* 1923, xxviii, 266.
 The differential diagnosis of cholelithiasis and floating kidney. *A Hirschmann Roentgenologia* 1923, 4, 23.
 Papilloma and adenoma of the gall bladder. *I Wall Ann Surg* 1923, lxxv, 270.
 Gall bladder drainage through the duodenum. *Hartman Arch f Klin Chir* 1923, cxviii, 706.
 Rational surgery in gall bladder disease. *L W Gray J Med Ass Georgia* 1923, xxi, 4.
 Peripneumonic fat necrosis resulting from the aspiration of gall-stones in the diverticulum of Vater. *Carver Muzila Deutsche med Wochenschr* 1923, xxi, 4.
 Chronic pancreatitis. *P L Marx Med Clin N Am* 1923, vi, 3.
 I injuries to the spleen. *L H Post Boston M & S J* 1923, lxxviii, 267.
 Spontaneous rupture of the spleen in typhoid fever. *L Purdie Arch f path Anat et* 1923, cxviii, 395.
 A case of splenectomy with alcoholic jaundice—diagnosis, treatment, and chemical cure. *L D Stray Med Clin N Am* 1923, vi, 9.
 Chronic septic splenectomy. *G Ward Lancet* 1923, cxv, 429.
 Splenectomy for Banti syndrome. *A Gutierrez Rev Assoc med argent* 1923, xxv, 97.
 Splenectomy. *M T Boon Rev Assoc med argent* 1923, xxv, 973.

Miscellaneous

Abdominal war wounds. *F P Mer Rev espal de chir* 1923, 4, 419.
 General view of the abdomen. *L W T Ann J N. Y. M Ass* 1923, vi, 56.
 The importance of the early diagnosis of acute abdominal pain. *J D Roux Virginia M Month* 1923, xxi, 643.

The diagnostic importance of peritoneal pain in the abdomen F EISENBERG Deutsche med Wchnschr 9 3, 44, 49

Application of Kappeler's splanchnic anasthesia to the pathogenetic and diagnostic interpretation of diseases of the upper abdomen D KILIANASCHKE Zentralbl f Chir 9 3, 1, 305

Pneumoperitoneum as an aid in diagnosis J J PETERS J Natl M Am 923 21 33 [41]

The X ray examination of subphrenic abscess for the determination of the site of operation J SOVIERA Zentralbl f Chir 923, 5

Prevention of peritoneal contamination in the drainage of abdominal abscesses J R EASTON J Am M Ass 923, 1000, 833 [41]

A case of chylous ascites CUYOT and ARN & J de med de Bordeaux, 9 3, 220 68

Torsion of the omentum C LARSEN Arch franc de chir 9 3, 276, 76

Retropneumothorax A GUTTENBERG Rev Aus med argent 9 3, 2200 76

Congenital tumors of the prenasal region N SHAMAM Arch f kinder Anat 9 3, 270, 1

Two interesting cases of abdominal tumors I SA CROC Torres and U SIKOO LA Rev espan de cirug 92, 45

Paravertebral and paranasal anasthesia in operation on the abdomen and the urogenital system F VO DE HERRERY Beitr klin Chir 19 3, 270, 34

Billi-Billy abdominal surgery J O CAMPBELL Aus tacky M J 923, 21, 9

Lectures in operative surgery Volume 9 Operation on the abdomen A BIRK, H BRADY, and H LUTHERSALL Leipzig Barth, 923

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Conditions of the Bones, Joints, Muscles, Tendons, Etc

Bone cells in relation to bone growth and repair T H B ST Internat J Orthodont Oral Surg & Radiogr phy, 1923, 12, 87

The dependence of growth in length on diseases of the bones and joints and function F J LAWKE Klin Wchnschr 923, 12, 220

Bone regeneration from the periosteum The development of the interosseous ligament in the forearm and leg B MARTIN Arch f kl Chir 922, 200 744 [42]

Marble bones — "Albers-Schoenberg's disease" LOBA and RUTZ Fortschr d Geb d Roentgenstr 9 3, 200 35

A case of multiple exostoses A D M Proc Roy Soc Med, Lond 9 3, 271, Sect Orthop 26

Typical osteitis and osteomyelitis F KANAZAKI Arch de med exp et anal 9 3, 21, 570

Periosteal osteon chitin N W WALTON Ann Surg 19 3, 1000, 3 9

Myelitis ossificans transiens D CARLETON Boston M & S J 9 3, 270, 387

Medullary myeloma with report of case J L R WEA Virginia M Month 9 3, 222, 723

Changes in the epiphyseal union under abnormal mechanical requirements and their relation to rachitic changes W MULLER Muenchen med Wchnschr 9 3, 170, 44

Lat rachitis the late rachitic origin of all deformities of growth and exostoses A FASCHER Ergbe d Chir Orthop 9 3, 203 [42]

Tumors of the parathyroid glands and their relation to osteomalacia B STRAUS Frankfurt Ztschr f Path 9 3, 270, 5 9

The treatment of surgical tuberculosis with leucyl G URRICH Beitr klin Chir 9 3, 270, 90

The specificity of the local reaction after subcutaneous injection of tuberculin in questionable cases of surgical tuberculosis C BLAU Deutsche Ztschr f Chir 923, 270, 21

The rapidity of blood sedimentation and trophoblastin in surgical tuberculosis H HILANO rev Polak gas lek 923, 9 3

A note on the phosphoric content of the serum of cases of bone tuberculosis treated by heliotherapy F J TIS DALL and R I HANCOCK Canad M Am J 9 3, 201, 77

Traumatism and osteo-articular tuberculosis SE AGUI Provencal Par 9 3, 200, 28

Tuberculosis of glands and bones—heliotherapy, an quartz light therapy D M COMB Med Clin N Am 9 3, 21, 70

The X ray differential diagnosis of cystic bone tumors F HANSEN Fortschr d Geb d Roentgenstrahlen 9 3, 200 54

Tumors of the parathyroid gland cases of multiple giant-cell sarcoma of the osseous system B GUTTENBERG Frankfurt Ztschr f Path 9 3, 270, 205 [42]

The influence of stimulation on chronic joint and muscle disease A ZIMMER and F SCHULZ Muenchen med Wchnschr 923, 100 30

Septic arthritis stimulating acute appendicitis J A BIRKS Lancet, 9 3, 270 486

Rheumatism of dental origin or streptococcal polyarthritia G R GONZALEZ Siglo med 9 3, 170, 70

The intra musca therapy of rheumatoid arthritis H LAURIE Med J Australia, 923 1, 200

Microscopic findings in pseudarthrosis, the condition of their development and their fate S MITSCHKE Arch f klin Chir 923, 200, 930

The theory of muscle trophy on the basis of experiments on cats J W MAYER Mitt d Grenzgeb d Med Chir 92 220 65

The origin of ischiemic contracture A SCHUBERT Deutsche Ztschr f Chir 19 3, 270, 35 [44]

Ischiemic paralysis H T FARRIS Proc Roy Soc Med Lond 9 3, 271, Sect Orthop

Atrophic conditions contrasted with muscular wasting from emaciation B R TUCKER South M J 923, 271, 76

Injury to the epiphysis of the left scroon process P B ROTH Proc Roy Soc Med Lond 9 3, 271, Sect Orthop 14

Acute subacromial and subdeltoid bursitis clinical picture, etiology and treatment H P WOLF Ann J Surg, 9 3, 220, 50 [45]

Congenital deformity of the upper limbs and feet R C EISENBERG Proc Roy Soc Med Lond 9 3, 271, Sect Orthop 3

Periosteal sarcoma of the humerus A J SCOTT H FORTUNE and G D MAYER Arch Pediat 9 3, 21, 89

Avulsion of the supraspinatus tendon C H BLANCHER Arch f klin Chir 923, 200, 55

Rupture of the biceps brachii tendon N A LINDHOLM Ann Surg 923, 1000, 358

- The eight bearing capacity of amputation stumps
T KOELLHARZ Zentralbl f Chir 923, 330
- The treatment of stumps by Seuerbrück's method
K E VART Zentralbl f Chir 9 3
- Derangements of the internal acromial cartilage of the knee joint R O CAMOZZINI Chirurzi J M 923, 14 55
- Knee contractures in chronic articular rheumatism and their treatment T NIKOLAI Hosp Tid 9 brv 9 7
- Critical study of the therapy of tuberculous gonitis
S ROSENBERG Ztschr f orthop Chir 9 2, 212, 36
- A new artificial knee joint, rolling knee joint C TEN HOUVE Zentralbl f Chir 923, 1, 3
- Homoplastic bone graft of the tibia VAN DER KAMP Arch franco-belges de chir 923, xxvi, 8
- Excision of the fibula in amputations below the knee joint C BOOBY Brit M J 9 3, 1, 173
- Tendon transplantation for talipes E L F VAN DER ROY Soc Med Lond 9 3, xvi, Sect Orthop 14
- Master of Paris splint of Pirogoff and the ballist vulgus operation D KULEVSKII Zentralbl f Chir 9 3
- 33
- Operative treatment of tuberculous spondylitis M RAYMOND Muenchen med Wchschr 9 3, 103 8
- Splints for severe scoliosis G HODDARV Muenchen med Wchschr 923, 102, 77
- The treatment of scoliosis by Abbott's method slightly modified R A RYANORA Semae med 9 2, xvi, 39

Fractures and Dislocations

- First aid to fractures H L CASTLEMAN Internat J Surg 923, xxvi, 9
- Fractures and dislocations. A textbook for students and practitioners G MAYER Berlin Springer 923
- Treatment and results in fractures J M DOOP Illinois M J 9 3, 212, 303
- The value of Grant's pins in the open treatment of fractures as seen roentgenologically D V KERR and J P KERR Am J Roentgenol, 9 2, 3, 95
- Subluxation of the inner end of the right clavicle P M HEATH Proc Roy Soc Med Lond 9 3, xvi, Sect Orthop
- The prognosis of dislocations of the shoulder joint Schweizer med Wchschr 922, 10, 960 95 [52]
- Fractures of the anatomical and surgical necks of the humerus V F MARSHALL Wisconsin M J 9 3, 221, 446
- 1 Reversed Colles fracture II Fracture of the first rib M I P RICE Internat J Surg 9 3, xxvi, 3
- So called clavicular fracture T STEPHENS California Stat M J 9 3, 221, 5
- Dorsal subluxation of the metacarpal of the thumb SORVAG Alm Wchschr 923, 2, 53

- Fracture of the head of the radius G. FERRY Arch franco-belges de chir 923, xxvi, 30
- Congenital dislocation of the hip, with intracapsular cystoma C L STOKER J Am M Ass 923, 102, 9 4
- Reduction of the hip in adults: the theoporus as an obstacle to reposition J FRANKEL Deutsche Ztschr f Chir 922, cxvii, 84
- The operative treatment of dislocated hips, congenital and pathological II A T FAIRMAN Proc Roy Soc Med Lond 1923, xvi, Sect Orthop 5 [51]
- Experiences with subtrochanteric osteotomy in irreducible congenital dislocation of the hip F HANZ Muenchen med Wchschr, 19 3, 102, 82
- Fracture of the small trochanter W T G POORE Proc Roy Soc Med Lond 923, xvi, Sect Orthop 3
- Physiologic fracture of the lower end of the femur C W BRETHERICH Chirurzi J M 923, 1, 4
- Simultaneous effort fractures of both patellae BOUQUON Arch franco-belges de chir 9 2, xxvi, 256
- The mechanism and treatment of transverse fracture of patella S THOMAS Riforma med 19 3, xxvii, 206
- An extension apparatus for treating fractures of the tibia and fibula E M STANTON J Am M Ass 9 3, 102, 9 5
- Fractures of the spine of the tibia R STEPHENS J Am M Ass 9 3, 102, 205 [51]
- Fracture of the head of the fibula A W LEMARCHAND Lancet, 923, cccv, 434
- The treatment of Pott's fracture by screwing on the internal malleolus G LUTCHER Presse med Par, 9 3, 221, 65 [52]
- 1 Cases of congenital fracture of the lower leg P BELL Norsk Mag f Lægevidensk 9 2, 100, 87
- The treatment of leg fractures with massage, rolling cushions, and elevation COLLIER Verhandl d deen chir Gesellsch Kopenhagen, 927 Hosp Tid 9 2, 119
- An undescribed fracture of the calcaneus H VALLER Rev med de la Suisse Rom 923, 214, 8 5 [52]

Orthopedics in General

- Rehabilitation of the industrial cripple and the wounded soldier E H HOWELL J Am Inst Monocorp 9 3, xv, 794
- The development of the orthopedic care of those injured in the war THOMAS Arch f orthop u Unfall Chir 923, 222
- The necessity for more accurate data in the surgeon's permanent disability report F E KAYNES California State M J 923, 221, 69
- Early activation of the muscles in infantile paralysis H O FINE Ohio State M J, 923, 222, 77
- The correction of deformed feet A HORTENBORN Jahrbuch f aerzt Fortbild 922, 222, 9

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

- The capillaries of the human body surface in health and disease O MUELLER Stuttgart Jahn 92
- Physiological and clinical investigations of capillary pressure M WILKE Presse med Par 923, 220, 4
- Chronic aneurism. What is it? How and when can it be treated? A W HAMMOND Med Times, 9 3, 2, 63 [52]
- A case of aneurism of the arch of the aorta and innominate artery in a woman B M VAN DER ROY Proc Roy Soc Med Lond 923, xvi, Chir, Sect 9

- Rupture of the aorta W M DE VRIES Nederl Tijdschr Geneesk, 9, 101, 27 3
- A case of congenital aneurism of the pulmonary artery G S SUTHERLAND Brit J Child Dis 923, 22, 27
- Traumatic aneurism of the left subclavian artery R CAMAVILLO Riforma med 923, 222, 245
- The so-called effort thrombophlebitis of the axillary vein GUYOT and JEANVREY Bull et mém Soc de chir de Par 923, 222, 3 [53]
- Venous thromboses during an attack of acute rheumatism F J POTVIN Fracturmer, 9 3, cx, 3

- Mezenteric thrombosis J F MITCHELL *Ann Surg* 93, 1901, 299 [53]
 Embolism in the treatment of circulatory disturbances in the extremities L KEY *Surg Gynec & Obst* 93, 1901, 300 [54]
 A case of pelioleucemia E NEUBER *Oregon Med J* 93, 1901, 5
 Thrombo-arteritis obliterans H C BIA Boston M & S J 93, 1901, 427
 A case of thrombo-arteritis obliterans J D BERTON *Proc Roy Soc Med Lond* 93, 1901, Clin Sect 4
 A case of thrombo-arteritis obliterans G F W *Proc Roy Soc Med Lond* 93, 1901, Clin Sect
 The treatment of stasis in the lower extremities and of its sequelae H FISCHER *München med Wochenschr* 93, 1901, 6
 Vascular crises produced by constriction of extremities J LE CALVE *Presse med Par* 93, 1901, 74 [55]

Blood and Transfusion

- The blood stream in the capillaries of the skin in anoma regions of the body in varying positions PASERNA and W VITTEL *Deutsche Arch f Klin Med* 93, 1901, 243
 Anomalous stream A SODERFELT *Rev Assoc med argent* 93, 1901, 958
 Arrest of hemorrhage in surgery particularly spontaneous arrest of hemorrhage H STRAUSS *Beitr klin Chir* 93, 1901, 657
 Protein therapy and coagulation of the blood R SATO *Ann W Oshimura* *Monatsschr f Geburtsh Gynaek* 93, 1901, 7
 Therapeutic stimulation of blood coagulation particularly with reference to surgery P F NICHOLSON *Beitr klin Chir* 93, 1901, 78
 The pathogenesis of blood formation I WAT and I WALL *Presse med Par* 93, 1901, 243
 An improved method for counting blood platelets H M RICE and F C ECKHART *J Am M Ass* 93, 1901, 6
 New principles in therapeutic inoculation A F WAGNER *Lancet*, 93, 1901, 365 417 473 [56]

- Some clinical manifestations of the anaphylactic reaction J F ANDERSON *N York M J & Med Rec* 93, 1901, 358
 Further investigations over chemical changes in the blood of cancer patients H KARY and P POTTS *Ztschr f d ges exper Med* 93, 1901, 473
 On the existence of more than four isozymal groups in human blood Part II C G GORTNER and J G HILL *Bell Johns Hopkins Hosp Bull* 93, 1901, 80
 Research on anemias in blood groups P MINO *Riforma med* 93, 1901, 75 [57]
 Blood transfusion E W PATTERSON *Ann Surg* 1901, 1901, 364
 Intraperitoneal transfusion with citrated blood chemical study D M SORDEN *Am J Dis Child* 93, 1901, 300
 A preliminary report on blood transfusion in malnutrition and infantile atrophy J D LEBRON *N York M J & Med Rec* 93, 1901, 295 [58]
 Treatment of anemias in children with blood transfusions H OETZ *Klin Wochenschr* 93, 1901, 400
 The physiological action of blood transfusion OETZ *Deutsche med Wochenschr* 93, 1901, 30
 Case of purpura hemorrhagica B VITTEL *Proc Roy Soc Med Lond* 93, 1901, Clin Sect
 Transfusion in purpura hemorrhagica R C LARRABEE *J Am M Ass* 93, 1901, 854
 The use of saline solutions intra cecally W M B LIME *Lancet*, 1901, 373 [59]

Lymph Vessels and Glands

- Observations on the lymphatics and lymph glands P T HERRING and F G MAC GILLIVRAY *Lancet* 93, 1901, 300 301
 The demonstration of the lymph nodules in human and animal tissues their behavior in various diseases and their significance for their pathology G MAVOIS *Deutsche Ztschr f Chir* 93, 1901, 46 [60]
 The results obtained in elephantiasis through the Lando operation W E SERRAVALLE *Monatsschr f Geburtsh Gynaek* 93, 1901, 73 [61]

GYNECOLOGY

Uterus

- Plastic closure of the bicornid ring through the uterus H HILGERT *Zentralbl f Gynaek* 93, 1901, 268
 Occlusion of the round ligaments of the uterus C GUARINI *Riforma med* 93, 1901, 249
 The uterus in malposition F KEMER *South M J* 93, 1901, 202
 A new operation for the correction of retroflexion of the uterus J W KERRY *Boston M & S J* 93, 1901, 300
 Malformations of the uterus and appendages A T JONES *Am J Obst & Gynec* 93, 1901, 34
 Double uterus and report of case A L KIRK *Nebaska State M J* 93, 1901, 94
 The life history of the double uterus J O POLAK *N York State M J* 93, 1901, 97
 The palliative and operative treatment of prolapse of the uterus J C HUBERT and C MAYER *Am J Obst & Gynec* 93, 1901, 275 [62]
 Menstruation—an inquiry into its etiology I KARY *Am J Obst & Gynec* 93, 1901, 285 [63]
 The treatment of menorrhagia by radium G BRACKE *Lancet*, 93, 1901, 421 [64]

- Chronic appendicitis particularly its relation to dysmenorrhea JCK *Monatsschr f Geburtsh Gynaek* 93, 1901, 364
 Dysmenorrhea and its symptomatic treatment L CARRUTHER *Presse med Par* 93, 1901, 3
 The surgical treatment of menorrhagia L BORELL *Gynec m obst* 93, 1901, 10
 Cervicalitis in the treatment of essential uterine hemorrhage S H GALT *Surg Gynec & Obst* 93, 1901, 343
 The treatment of severe and persistent uterine hemorrhage by radium with report upon forty five cases S FORBES *Med Press*, 1901, 1901, 300
 False pregnancy and abortion resulting due to teratoma polyp A L GOWEN *Spain med* 1901, 1901, 4
 A case of gangrenous fibrosis of the neck of the uterus mistaken for prolapse GERVOT and KERRY *J de med de Bordeaux*, 93, 1901, 165
 Gangrenous fibrosis and pregnancy M RICE *J de med de Bordeaux*, 1901, 1901, 58
 Fibromyoma of the uterus M RICE *Spain med* 1901, 1901, 4
 Anatomic-pathologic studies of case of uterine fibrosis

treated with the X ray C DANIEL and A B RICE Gynec. Obstet 923, 11, 5

X-rays in the treatment of uterine fibroids J R RIDDALL Glasgow M J 923 xvii, 5

Radiotherapy or surgical treatment in fibroids of the uterus J B KOURAKIS Gynec et Obst 9 4, 185 [64]

A report of three cases of abdominal section for uterine fibroid after the use of radium T J WATKINS Surg Gynec & Obst 923, xxvii, 423

The surgical treatment of uterine fibroids J N S ULL Glasgow M J 19 3 xvii, 145

Mixed tumors of the uterus A J PETERSEN J Lab & Clin Med 923 viii, 369

The treatment of carcinoma of the uterus with special reference to surgery the X ray and radium H SCHOTTZ Northwest Med 9 3, xiii, 77 [64]

The morphological histology of adenocarcinoma of the body of the uterus in relation to longevity study of 86 cases A E MARBLE Surg Gynec & Obst 9 3, xxvii, 385 [61]

The treatment of certain conditions of the cervix uteri G GIBSON N York State J M 923 xxix, 99

Unrecognized syphilis, tertiary syphilitic ulceration of the uterine cervix, and post-vaccination reaction P SYLVESTER Rev med de la Suisse Rom 9 3, xliii, 7

Cancer of the cervix W H KIRKMAN Kentucky M J 923, xii, 60

Carcinoma of the cervical stump report of eight cases L DAVIS Boston M & S J 9 3, cxxxviii, 304

The technique of the treatment of carcinoma of the cervix uteri with combination of X rays and radium H SCHOTTZ Am J Roentgenol 923, 2, 9

T cases of cancer of the cervix treated by radium before operation T W ENNIS and A GORDON Proc Roy Soc Med Lond 923, xvi, Sect Obst & Gynec 3

The results of radium treatment of uterine cancer M FERRA Arch franco-belges de chir 923, xxvi, 395

Radium treatment and excision of neoplasms of the uterine cervix ROGER DE RINGHOUT, PIERRE, and GARNIER Arch franco-belges de chir 923, xxvi, 370

A uterus removed for carcinoma of the cervix after treatment by radium A H RICHMOND Proc Roy Soc Med Lond 923, xvi, Sect Obst & Gynec 5

Adnexal and Peri Uterine Conditions

Pycnosalpinx with fistula into the bladder salpingography, transvaginal intrabulbar instillations of silver nitrate therapy DUVERNOY and DAX J de med de Bordeaux 9 3, xiv, 87

The removal of pus tubes saving of the ovaries, and suspension of the uterus P P CANAC MARQUE California Stat M J 923, xii, 7

T cases of intraperitoneal catadysm from tubal rupture L L PRATER Report de med y chir 9 3, xiv, 37

Experimental investigation of the value of the uterine commercial ovaries extracts S H GALT and W HARRIS Radiocology 9 3, viii, 4 [61]

Hernia of the ovary A SCHOTTMAYER Bert Klin Chir 923, cxxxviii, 45

Calculation of the ovary report of case T C BOY J Am M Ass 9 3, lxxx, 9

Papillary cystadenoma of the ovary J W GIBSON Virginia M Month 923, xlii, 739

Ovarian cysts and pregnancy—result in thirty six cases operated upon during pregnancy J SERAFINO Tex Gynec et Obst 923, vi, 405

A contribution to the study of the effects of radium upon rabbit ovaries H A WARR Surg Gynec & Obst 923, xxvii, 373 [61]

External Genitalia

Traumatic third-degree laceration of the perineum in female child 7 years old report of case L E PRA Boston M & S J 9 3, cxxxviii, 58

Secondary stenosis of the vaginal orifice C STANCA Zentrbl f Gynec 92, xlii, 769

A case of traumatic septum of the vagina abortion with retention of the fetus and hematoecolpos E GORDON Rev franc de gynec et d obst 923, xxvii, 93

A case of large vaginal cyst arising from Gartner duct J SIKES Zentrbl f Gynec 19 3, xliii, 73

Adenoma of the vaginal fornix simulating cancer of the cervix H R SERVICE Proc Roy Soc Med Lond 9 3, xvi, Sect Obst & Gynec 27

Specimen of squamous epithelioma of the vagina T G SERVICE Proc Roy Soc Med Lond 923, xvi, Sect Obst & Gynec 26

Primary carcinoma of the vagina treated by hysterectomy D DOTL J Obst & Gynec Brit Emp 923, xxi, 38 [62]

A case of primary carcinoma of the vagina E HOLLAND J Obst & Gynec Brit Emp 923, xxi, 40 [62]

Squamous epithelioma of the vagina T G SERVICE J Obst & Gynec Brit Emp 923, xxi, 43 [62]

Adenoma of the vaginal fornix simulating cancer of the cervix H R SERVICE J Obst & Gynec Brit Emp 9 3, xxi, 44 [62]

A specimen of primary carcinoma of the vagina E HOLLAND Proc Roy Soc Med Lond 923, xvi, Sect Obst & Gynec 5

Schneider's incision with reference to the exposure obtained in inaccessible ectocervical fistula J G STRACHTER Hahnemann Month 923, liii, 309

A case of ulcerating granuloma of the podenda in which healing began immediately subsequent to the administration of antimony P MASSON BARR Proc Roy Soc Med Lond 9 3, xvi, Clin Sect 5

Miscellaneous

Progress in gynecology F A PIERCE Boston M & S J 9 3, cxxxviii, 132

Value of cytology in gynecology E CASTELLO Sem-w med 9 3, xxx, 150

Constant or paradoxical localization of certain pains in gynecology M MENZER Gynec et Obst 923, ii, 5

Local infections and their clinical relations to metastases in the female genitalia A B KRYN Am J Obst & Gynec 9 3, 377

Gonorrhea in women treated with continuous pessaries O W RUTHER Lancet 9 3, cxxx, 434

Birth control and sterility C H D VON Surg Gynec & Obst 923, xxvii, 455

The problem of experimental parthenogenesis (artificial fertilization) L MAHOMAT Gynec et Obst 9 3, ii, 5

Report of case of genital abnormality and acute appendicitis in girl of 8 H W L VON Am J Obst & Gynec 923, 36

Spinal anesthesia in gynecology W R COOPER Texas State J M 9 3, xliii, 554

Uteral injuries during pelvic operations J M M. Ann Am Surg 19 3, lxxviii, 514

The healing of wounds of gynecological operations where there has been previous roentgen treatment A VOOR Med Klin 92, xviii, 149

OBSTETRICS

Pregnancy and Its Complications

- Diets during pregnancy E CARY Illinois M J 913, 212, 8
- The blood pressure during hemolysis in normal pregnant women at term S MARZA and D IRLATA Rev Assoc med argent 912, xxv, 913
- Uterine displacements and pregnancy B R McCULL LAM Am J Obst & Gynec 912, 24
- Contracted pelvis and other serious maternal defects requiring artificial termination of pregnancy H H COMBES J Michigan State M Soc 913, xxi, 50
- A new measurement as an aid in the diagnosis of rachitic and generally contracted pelvis W E WALK and R W ALLEN Am J Obst & Gynec 912, 282, 163
- The value of abdominal measurements in recognizing the size and maturity of the fetus C R H VICK Texas State J M 912, xviii, 541
- The sounds of the fetal heart G A STEPHENS J Obst & Gynec Brit Emp 912, xxi, 3
- Intermittent pregnancy T C GILBERT Texas State J M 1912, xviii, 446
- Ectopic pregnancy C V SCOTT J Arkansas M Soc 912, xii, 44
- A case of ectopic pregnancy at term with living child B J O NEIL and W W CHARTWELL J Am M Ass 913, lxxx, 913
- A case of abdominal pregnancy A E PITTIER J Obst & Gynec Brit Emp 912, xxi, 40
- Ruptured fetal pregnancy case record C T ULICH Nebraska State M J 912, viii, 65
- Two embryologically distinct specimens of fetal trunks including critical examination of all known cases L B LAUR Surg Gynec & Obst 912, xxxv, 407
- The diagnosis of anencephaly in case of tumor at the neck of the fetus in triple pregnancy J C LAMC WO Georgia med 1913, xiii, 479
- Heart disease and pregnancy T M WILSON and G R HODGKINS J Michigan State M Soc 1912, xxi, 148
- Management of associated pulmonary tuberculosis and pregnancy L CLARK Surg Gynec et Obst 912, vii, 24
- Studies on the incidence of pregnancy in syphilis The course of syphilitic infection in pregnant women J E MOORE Bull Johns Hopkins Hosp Balt 912, xxxv, 80
- Appendicitis the female genital organs, pregnancy P DE GONCOURT Deutsche Zeitschr f Gyn 912, clxxx, 23
- Acute appendicitis complicating pregnancy A W ARDEN Nebraska Stat M J 912, viii, 101
- Accidental hemorrhage report of five cases A C WALK J Med Ass Georgia 912, xxi, 105
- Report of 1 cases of placenta previa in which cesarean section was done J A FORD Illinois M J 1913, xxi, 99
- On food deficiency disease simulating pregnancy at term J P MAYWELL J Obst & Gynec Brit Emp 913, xxi, 34
- Improved phenylmethylenediphosphonate for liver function in pregnancy and its toxemia H H ROSENKRANTZ and E F SCHREIBER J Am M Ass 1912, lxxx, 741
- Report of case of toxemia of pregnancy with acute yellow atrophy of the liver F R CUSTER and H G JACOB Am J Obst & Gynec 912, 275, 163
- Toxemia of pregnancy including pre-eclampsia, eclampsia, and septicemia, the indications for and the method of,

- artificial interruption of pregnancy R. PETERSON J Michigan State M Soc 913, xxi, 44 [64]
- Eclampsia D H BENDISKY Am J Surg 1912, xxvii, 40
- Investigations on eclamptic women K O LARSON Acta med Scand 913, Supp 12, 260
- Hypertensive gravidism J N. BELL J Michigan State M Soc, 1913, xxi, 40
- Glycemia resulting in the birth of dead child treated with successful results in subsequent pregnancy R WISE Proc Roy Soc Med Lond 912, xvi, Sect Obst & Gynec 25
- Pregnancy in fibroid uterus C M ROBERTSON Brit M J 912, 4, 595
- Exhibition of a fibroid with pregnant uterus A GOLDENROY Surg Gynec & Obst 912, xxxvi, 434
- What should one do in the presence of pregnancy complicated by fibrous uterus P BALLARD and J LISA Rev franç de gynéc et d'obst 1913, xviii, 50
- Induced abortion, uterine perforation, laparotomy O DE ROOYVILLE Rev franç de gynéc et d'obst 912, xviii, 57

Labor and Its Complications

- A safe and practical method of administering scopalamine-morphine anesthesia in obstetrics B VAN HOOKEN N Orleans M & S J 913, lxxv, 33
- Nitrous oxide and oxygen in obstetrics A E RIVES Illinois M J 912, xxi, 230
- Nitrous oxide in obstetrics J R WORLEY Texas Stat J M 1913, xviii, 35
- The use of morphine in obstetrics F HENDERSON and A R VOYCEMAN Ohio State M J 1913, xvi, 39
- The induction of labor at term W W ARDEN Nebraska State M J 913, viii, 8
- Primary uterine inertia in twin pregnancy following premature rupture of the membranes A TORRENTO Nebraska State M J 913, viii, 107
- Functional dystocia in normal pelvis recognition and management J A HARRAR Am J Obst & Gynec 912, 246, 163
- Obstructed labor A C McEWART Canadian Pract 912, xliii, 65
- Poster version E F PURCELL Hahnemann Month 913, lxxv, 70
- A two lobe malformation for persistent occipito post. non presentation S SINGER Surg Gynec & Obst 912, xxxv, 4
- Pituitary in the second stage of labor M A TATE Am J Obst & Gynec 912, 5
- Report of case of sudden death in labor due to intra cranial hemorrhage R A BARTHOLOMEW J Med Ass Georgia 912, xxi, 99
- Clinical aspects of blood loss in labor P T HARRIS Am J Obst & Gynec 1913, 33 [64]
- Should poliotomy be recognized as justifiable operation in obstetrics A H BILL Am J Obst & Gynec 912, v, 58
- Cesarean section H H OGILBY Texas State J M 912, xviii, 548
- Some reflections on low trans-peritoneal cesarean section E HART Rev franç de gynéc et d'obst 913, xviii, 38
- Indications for cesarean section—a study of 100 cases M BOWELL J Michigan State M Soc 912, xxi, 140

Distension of the lower part of the rectum due to the administration of simple enemas during labor W I SE J Obst & Gynec. Brit Emp. 9 3, xxx, 47
 Uterine suture and drainage through the line of closure A VON REINER Zentralbl f Gynaek 9 3, xlvii, 27

Puerperal Infection and Its Complications

The advantages of dieting during lactation E FORTIN Semane med. 9 3, xxx, 450
 Clinical value of an analysis of mother's milk D SALCEDO Med. Hiera. 9 3, vii, 1
 The care of the puerperal C D LINDER J Am Inst Homoeop. 9 3, xv, 830
 Deep perineoplasty for laceration of the perineum I REAR Arch franco-belges de chir. 9 3, xxxvi, 74
 Reconstruction of perineal genito-urinary childbirth injuries F C WALLACE J Indiana State M Ass 9 3, xvi, 84
 Acute postperal inversion of the uterus C B L ROW Arch Brit M J 9 3, 4, 557
 The prognosis of puerperal tuberculous coincident with the puerperium L CLARKE Gynaec et obst. 9 3, vii, 90
 The rejection of settling of the red blood cells in puerperal septic processes particularly their conduct after the intravenous injection of colloidal silver (disparagin) and Pregel's saline solution in these diseases A MARIQUET and K. HONDEL Arch f Gynaek. 9 3, cv, 385
 The treatment of puerperal infections, with discussion B P W TOWN Brit M J 9 3, 2, 4, 905 51

Newborn

The identification of babies in maternities J B DeLaz Am J Obst & Gynec. 9 3, v, 83
 Attacks of arrested respiration in the newborn G L STILL Lancet, 9 3, civ, 43 [68]
 A case of hemorrhage in the newly born W R G OWEN Med Press, 9 3, civ, 96
 Blood transfusion by the citrat method in hemorrhages of the newborn F H FALLS J Am M Ass 9 3, lxxx, 678
 Infantile myxodermis and its treatment AYOLAVITZ Arch de gynec. obst. y pediat. 9 3, xxxiv, 8
 Tuberculosis of the newborn R DREH Gynaec et obst. 9 3, vii, 99
 Description of double monster R MISTRE Semane med. 9 3, xxx, 403
 Obstetrical depression of the parietal bone A MARIQUET Arch franco belges de chir. 9 3, xxxvi, 24
 Ophthalmia neonatorum J. BOURQUIN Rev med de la Suisse Rom. 19 3, xlii, 77

Miscellaneous

Address before the Academy of Medicine, Paris BARY DEAU Presse med. Par. 9 3, xxx, 51
 Lessening maternity hazard C E BOVE Trained Nurse & Hosp. Rev. 9 3, lxx, 24
 The physician and birth control T W FOGAR Med Times, 9 3, li, 73
 Obstetrics in 1,000 cases as seen by country practitioner A KUEHLHART J Lancet, 9 3, xlii, 46

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

Syphilis of the adrenals W H D ABERNETHY Am J Syphilis 9 3, ii, 7 [67]
 Technique of adrenalectomy in the case of normal or slightly altered glands C WILLIAMS Bruxelles-med. 9 3, lxx, 577
 Condition of the adrenals after liver extirpation H ELLAS Zschr f d ges exper Med. 9 3, xxxi, 447
 Experiences in percutaneous catheterization of the renal pelvis by Roosenstein's method LIEBMAN Fortsch. d. Geb. d. Roentgenstrahlen, 9 3, xxi, 90 [67]
 Perineal tumors report of case R A D J Am M Ass 9 3, lxxx, 840
 Crowded malposition of the kidneys W PARKER Arch f path Anat etc. 9 3, ccc, 301
 The nephroses of urinary tube P BOUTY Arch d. mal d. reins et d. organes genitourinaires 9 3, li, 190
 Is retroperitoneal diverticuli? I KOLIVANSKY Presse med. Par. 9 3, xxxi, 278
 The treatment of renal anuria A VALLE Zschr f urol Chir. xi, 75 [67]
 Renal cryptosplenism A G CAMARCO J d urol med et chir. 9 3, xv
 Pyelography I SZABO Revue klin Chir. 9 3, cxx, 411
 Vesical intubation and bilateral catheterization, method of working the right & left kidney or the other (F. JON) J d urol med et chir. 9 3, xv, 3
 Polycystic disease of the kidney report of case in an infant A TOWN Am J Dis Child 19 3, xiv
 Ectrocystosis of the kidney K STA Rev espal de urol 9 3, 35

Hydrocephalus H G HAMER and H O MEYER Chicago M Rec. 9 3, xi, 383
 Hydrocephalus of single kidney spontaneous rupture into the peritoneal cavity P TURNER Proc Roy Soc Med Lond. 9 3, xv, Clin Sect. 24
 Congenital hydrocephalus, traumatic hemistoma phorus rupture of the hemistoma phorus VERRILL and LEVOTTE J d urol med et chir. 9 3, xv, 20
 Infections of the kidney T V DEARY Am J Surg 9 3, xxxiv, 63
 The relation of acidosis to nitrogen retention in experimental nephritis D V VON HOOVER and C C HASKELL South M J 9 3, xvi, 70 [68]
 A case of pyelocystitis treated by intravenous injections of arotropus combined with pelvic lavage DEVEREAUX and DALL J de med de Bordeaux 9 3, xcv, 67
 Tuberculosis of the kidney and nephrectomy H VINCIGER Zschr f urol Chir. 9 3, x, 30 [68]
 Pyelitis some clinical relationships E W JAMES Northwest Med. 9 3, xlii, 96
 Abnormality of the kidney pelvis with associated pyonephrosis G P MITCHELL Surg Clin N Am 9 3, li, 29 [69]
 Pyonephrosis with multiple calculi in child of years case report G P GIBSON Kentucky M J 9 3, xxi, 30
 Kidney tumor and pyonephrosis review of cases J H ALBY Virginia M Month. 9 3, xlii, 7 5
 Pyonephrosis following congenital hydrocephalus complete dilatation of the excretory channels of the right kidney nephrectomy recovery A BOURCIEL J d urol med et chir. 9 3, xv, 95
 Genitourinary tumors E MICHONNOL Deutsche Zschr f Chir. 9 3, cxviii,

- The anatomy and clinical aspect of epithelial neoplasms of the renal pelvis. M. GALT. *Deutsche Zeitschr f Urol u. Nierenh.* 9, 2, 40. [69]
- On subcapsular pyelotomy, its remarks on the origin and treatment of renal calculi. W. S. H. VON. *Proc Roy Soc Med Lond*, 9, 3, 11, Sect Surg. [78]
- The technique of nephrotomy. E. HALL. *Arch Urol Chir* 9, 2, 40. [69]
- The technique of nephrotomy. A. H. V. *Zeitschr f Urol Chir* 9, 3, 41. [78]
- The use of effect of unilateral renal decapsulation in systemic anemia. A. YILDERIM. *Klin Wochenschr* 9, 2, 40. [69]
- The diagnosis of malignant tumors of the kidney. M. LUTER. *Zeitschr f Urol* 9, 2, 40. [78]
- A spontaneous hematoma in the region of the kidney. F. K. HALL. *Ann Surg* 9, 3, 11, 4. [78]
- Excision of embryoma of the kidney in infant. C. R. KROHN. *Ann Surg* 9, 3, 11, 4. [78]
- Concretions of the kidney. C. L. DENTON. *J Am M Ass* 9, 3, 11, 4. [78]
- Ureteric calculi and aneurysm of the kidney in children. H. T. PIERCE. *Pediatrics* 11, 3, 11, 4. [78]
- A case of complete unilateral displacement of the ureter and renal pelvis. P. G. WAT. *Cincinnati M J* 9, 3, 11, 4. [78]
- Anuria following pyelotomy. D. F. ARANDA. *Arch de med chir y especial* 9, 3, 11, 4. [78]
- The treatment of ureteral calculi from the general surgical standpoint. R. I. PIERCE. *South M & J* 9, 3, 11, 4. [78]
- A large ureteral calculus. R. W. S. ALBY. *Cincinnati M J* 9, 3, 11, 4. [78]
- Experimental intrapertoneal division of one ureter. W. C. JONES. *South M J* 1912, 11, 4. [78]
- Two cases of double ureterotomy on one side. J. S. COVAT. *Arch de med chir y especial* 9, 3, 11, 4. [78]
- acid inf. quind. equib. 304
- ### Bladder, Urethra, and Penis
- Ectrophy of the bladder. N. COVAT. *Annals* 1912, 11, 4. [78]
- A case of ectrophy of the bladder, its embryonic umbilical hernia and associated aplasia. GUERIN. *Annals* 1912, 11, 4. [78]
- Varicose of the bladder. MANOVIT. *Arch de med et chir y especial* 9, 3, 11, 4. [78]
- A case of external dilatation of the bladder, urethra, and penis as result of valve-like closure of the internal urethral orifice. C. O. BOHNET. *Zeitschr f Urol Chir* 9, 3, 11, 4. [78]
- Interruption of the bladder at the inguinal canal. H. E. STEIN. *J Am M Ass* 9, 3, 11, 4. [78]
- Partial spontaneous inversion of diverticulum of the bladder with double stone. C. R. B. COOPER. *J Urol* 19, 3, 11, 4. [78]
- A new symptom of caliculi calculi. G. GUERIN. *Publ. Clin. Rouen* 9, 3, 11, 4. [78]
- Observation at the ureterocystic valve. T. N. H. *Ann Surg* 9, 3, 11, 4. [78]
- The most surgical removal of parasites in the urinary bladder. D. R. MILLER. *J Am M Ass* 9, 3, 11, 4. [78]
- Report of case of stone in the bladder, both formed round, nature of pyelonephritis. H. L. HARRINGTON. *J Urol* 9, 3, 11, 4. [78]
- The treatment of bladder infections. S. H. PIERCE and H. SCHWARTZ. *Ann Med* 1912, 11, 4. [78]
- The rapid use of cystitis in children. J. C. HARRIS. *N York M J & Med Rec* 9, 3, 11, 4. [78]

- The treatment of tuberculous of the bladder. G. WAT. *Verhandl d Kongress Chir. Petrograd*, 9, 3, 11, 4. [78]
- Excision of tissue from the bladder for diagnosis. K. SCHEFF. *Monatsh. med. Wochenschr.* 9, 3, 11, 4. [78]
- A case of hemorrhagic prostatic of the bladder. J. ZACHAR. *Gydehvald*, 19, 3, 11, 4. [78]
- Increased tumor of the bladder. F. T. STEIN. *J Urol Med et Chir* 9, 3, 11, 4. [78]
- The treatment of epithelial tumors of the urinary bladder based on excision of 16 cases personally observed and treated. F. H. L. L. *Ann Surg*, 9, 3, 11, 4. [78]
- A case of cancer of the bladder treated by deep radiotherapy. A. BOHNET. *J Urol Med et Chir* 19, 3, 11, 4. [78]
- The treatment of cancer of the bladder by radium implantation. G. G. STEIN. *J Urol* 9, 3, 11, 4. [78]
- A new method of applying radium through the cystoscope. L. BOHNET. *J Urol* 9, 3, 11, 4. [78]
- Destruction in the treatment of tumors of the lower urinary tract. B. C. COOPER. *J Urol* 9, 3, 11, 4. [78]
- The urethral crest. C. L. DENTON. *Ann J Surg* 9, 3, 11, 4. [78]
- Urethritis. J. H. H. *J Oklahoma State M Ass* 9, 3, 11, 4. [78]
- Some remarks on the growth of spermatozoa in chronic urethritis. H. BOHNET. *J Urol Med et Chir* 1912, 11, 4. [78]
- A comparative study of venereal infections in the male and female urethra. H. W. M. H. and L. C. TOME. *South M J* 9, 3, 11, 4. [78]
- Gonorrhea and its complications in the male. The value of urethroscopy, diagnostic and therapeutic agent. M. E. ARONSON. *Internat J Surg* 9, 3, 11, 4. [78]
- Complications occurring in gonorrheal urethritis. A. H. COOPER. *Boston M & J* 1912, 11, 4. [78]
- A standard cure in gonorrheal urethritis in the male. C. H. GALT. *J Am M Ass* 9, 3, 11, 4. [78]
- The anti-gonococcal vaccine of the Pasteur Institute of Paris. H. BLANCHET. *J de med de Bordeaux*, 9, 3, 11, 4. [78]
- A case of carcinoma of the corpus spongiosum urethra. BOHNET. *J Urol Med et Chir* 9, 3, 11, 4. [78]
- Reversion of the urethra, its embolization and nature in chlamydial structures and fistulae. N. PIERCE. *Arch de med chir y especial* 9, 3, 11, 4. [78]
- A case of gangrene of the scrotum and penis. W. C. STEIN. *J Am M Ass* 9, 3, 11, 4. [78]

Genital Organs

- Absence of the prostate associated with endocrine disease notably hypopituitarism, its histology of epithelial cancer. H. LUTER. *Endocrinology* 9, 3, 11, 4. [78]
- The treatment of abscess of the prostate by sclerotherapy. H. BOHNET. *J Urol Med et Chir* 9, 3, 11, 4. [78]
- Calculation out of the prostate. D. STEIN. *Ann Surg* 1912, 11, 4. [78]
- The treatment of the term prostate hypertrophy or adenoma. F. W. BRIDGES. *Med.* 9, 3, 11, 4. [78]
- Hypertrophy of the prostate. W. H. H. and W. H. ROSE. *Frankfurt Zeitschr f Path* 9, 3, 11, 4. [78]
- Adenoma of the accessory glands suggesting prostatic hypertrophy. J. W. BOHNET. *Zeitschr f Urol Chir* 19, 3, 11, 4. [78]
- Encephalitis of the blood and neoplastic growths of the prostate. M. N. COVAT. *J Urol Med et Chir* 9, 3, 11, 4. [78]
- Intertherapeutics in prostatic conditions. Histological review and critique. V. C. PIERCE. *J Urol* 9, 3, 11, 4. [78]

Imperfect result from removing the prostate: recovery following excision of the adenoma J MARTIN J d urol med et chir 9 3, xv

Cancer of the prostate: nil rudrum M ARNDT J d urol med et chir 9 3, xv 303

Some problems of prostatectomy C MORSON Practitioner 19 3, cx, 53

Prostatectomy with special reference to the perineal route J S HONESTY Virginia M Month 9 3, xlv, 78

Some further observations on prostatectomy R C BAY Virginia M Month 9 3, xlv, 78

Anatomical and clinical in estrogens concerning the behavior of the ejaculatory duct after suprapubic prostatectomy R LICHTENBERG Ztschr f urol Chir 9 3, cx, 5

An old histologic of the tunica vaginalis resembling testis of the testicle CROUET and PIERCEAU J de med de Bordeaux 925, cxv, 68

Epididymectomy in genital tuberculous MARSON Presse med Par 9 3, cxvi, 50 [74]

The physiology of the seminal coxles S LAMERZA Seminal med 9 3, xv, 520

Anomalies in the descent of the testicles in the castrated G D AUSTON and V. utschowa Medunus 9 3, 5, 1 [74]

A case of bilateral ectopia of the testes BOWEN Arch franco belge de chir 9 3, cxvii, 260

Seminoma from an ectopic testis B ARON and DRYIN J de med de Bordeaux 925, cxv, 63

Operation for undescended testis HARRIS Arch f klin Chir 9 3, cxvi, 93

Traumatic orchitis and employers liability LACROIX Med Press 925, cxv, 1

Testis transplantation C HANSEN Zentralbl f Chir 9 3, 10

Testis transplantation HILGEMANN Arch f klin Chir 9 3, cxvi, 300

Pathogenesis of essential hydrocele M BICAK Pol dza Rome 9 3, cxv, cxvi, 306

Operations on the genital organs W HATZELBERGER Deutsche Ztschr f Chir 9 3, cxvii, 3

Alternating glandular hermaphroditism in child of years A SANO J d urol med et chir 9 3, xv, 8

Miscellaneous

The relation of the general practitioner to the urologist W F BRADSHAW Minnesota Med 923, 4, 8 [74]

The relationship of genito-urinary diseases to the chronic patient B C COMBES Chicago M Rec 923, xlv, 589

The urea secretion constant S ROLANDO J d urol med et chir 9 3, xv, 95

A case of chyluria: treatment nbarvobenzol H CRAVIER and C LOMO OURL J d urol med et chir 923, xv, 28

I orthostatic albuminuria: unilateral disorder? C QUIN J Am M Ass 923, lxxx, 809

The value of cystoscopic examination in hematuria A M CRANER N York Med J M 923, cxvii, 64

The biology of urinary lithiasis: an experimental study L D KATZ Arch Surg 923, 575 [75]

A case of staphylococcus infection through the urinary organs cured after tonsillectomy R PROCTOR Ztschr f urol Chir 9 3, xi, 80

The local Wassermann reaction: new diagnostic aid in primary syphilis D STICK and H RYTER Minnesota Med 923, 7, 67

A case of co-existent tuberculous and syphilis in the genital tract D M P MACE Med Press, 9 3, 8, cxv, 1

Experiences with the urochromogen reaction of the bladder in suppurative tuberculosis FUSCH THURNER and LEON Arch f klin Chir 9 3, cxvi, 370

The operative treatment of genital tuberculosis R BACHMANN Ztschr f urol Chir 9 3, xi, 14 [75]

Reflections of urologist upon recent results of roentgen therapy A COHEN J d urol med et chir 9 3, xv, 89

The relation of the urologist to cancer J D BAX Boston M & S J 9 3, cxviii, 43

Nitrous oxide oxygen: its value as general anesthetic in genito-urinary surgery J J BUTTERY N York State J M 923, cxvi, 1

An apparatus permitting patients with cystostomies or permanent catheters to be ambulatory F J L VERAU J d urol med et chir 9 3, xv, 60

Continuous dehydration of drying chambers with formaline and of wounds: nith calcium chloride M BOWEN J d urol med et chir 9 3, xv, 1

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

Pre and postoperative care P GILBERT Polidza Rome 9 3, cxv, cxvi, 335

Pre and postoperative treatment in surgical lesions of the abdomen R & B ROSS Internal J Surg 9 3, cxvii, 6

The principles of the care of surgical patients G M BELLET Am J Clin Med 923, xxi, 55, 57

Aseptic methods for gastro-intestinal operations F CROUET N Arch ital de chir 9 3, 443

A consideration of abdominal drainage F J MCCONNOR Ohio State M J 9 3, xvi, 181

A new technique for the closure of the abdomen R F PARRA Surg Gynec & Obst 1923, cxvii, 416

Postoperative treatment W L MARTIN U S Na al M Bull 9 3, xvi, 151

Comparative investigations of potassium salt and devine salts L DILLON Bear Men Chir 9 3, cxvii, 68

Dressing sores—prevention and treatment G M DORRANCE and J W BRADFORD Am J M Sc 1923, cxv, 46

Handbook of general surgery H O YAPPANER Leipzig Kliniker 92

Atlas of general surgery G MAR FRIEL Munich Lektoren 9 3

General plastic surgery J S D VIT Ann Surg 9 2, lxxv, 57

Relation of absence of stimulus to wound healing R LEMPO Arch f path Anat etc 9 3, cxvi, 22

The prophylactic use of ether in the abdominal cavity: laparotomy to promote postoperative intestinal peristalsis K F KRYSTIN Monatsschr f Geburt u Gynak 9 3, lxx, 80

Magnesium sulphate sedation P G WESTO and M O HOW Am J M Sc 9 3, cxv, 431 [77]

The paraffin treatment of burns L REBOUTE Muen chern med Wchnchr 923, lxx, 79

Some problems of industrial surgery W L FRYO J Michigan Stat M Soc 9 3, xvi, 38

Radium

- The use of radium in the treatment of disease D Tux
Brit M J 923 4, 404
- The use of plastic substances in the radium therapy of
superficial surfaces A EAGLETT O Alfonso, and G
Richard Report de med y chirg 9 3 xiv 53
- The rôle of radium needles in the treatment of neoplastic
diseases W L CLARK Am J Roentgenol 9 3, 2,
304
- Some observations on radium therapy in cancer at the
Radium Institute Paris M W THURMAN Rhode
Island M J 9 3 vi, 30

- Radium in sarcoma W H B ABERN Med Press
923, cxv, 13
- The control of cancer A PRINCE Canadian M Ass
J 923 xii, 160
- Recent cancer therapy F C Wood Canadian M
Ass J 9 3 xii, 5

Miscellaneous

- Surgical diathermy in its relation to radiotherapy
G KOLLMER and H KATZ J Radiol 9 3, iv 70
- Ultra violet radiation A J PACING J Radiol 923,
iv 80

MISCELLANEOUS

Clinical Entities—General Physiological
Conditions

- The pathologic changes produced in those rendered un-
conscious by electrical shock and the treatment of such
cases B SELLERSBY S JELLISON and E P CONNER
RATOR Arch Radiol & Electrother 9 3 xxvi, 370
- The treatment of traumatic shock G JAVENET
Arch franco belge de chir 9 3, xxvi, 57
- Sudden death from anaphylactic shock F W SW
Brit M J 923 405
- Studies on exhaustion physical training G W CARL
Arch Surg 923 vi, 450
- A case of acrobatic intoxication M CAMERY Proc
Roy Soc Med Lond 9 3 xvi Clin Sect 6
- Raynaud syndrome in non-syphilitic infant with
remarkable family history F P WENZ Brit J Child
Dis 923 xi 5
- A case of acrocephaly in girl aged 6 with congenital
heart disease (aortic stenosis) F SYLVESTER Proc Roy
Soc Med Lond 9 3 xi Clin Sect
- The treatment of leg ulcers and of varices F BIA
cino Rev med de la Suisse Rom 923 xlii, 55
- A contribution to the knowledge of enzymes in normal
and pathologic human urine with special reference to
diabetes and Addison disease D MANNING, C
LOCKETT A GOLARINI and P LAGET Riforma med
9 3 xxviii 205
- Radiation of the adrenals in diabetes I SZABO Roent
genologia 923 6
- Insulin I J KAVING J Michigan State M Soc
9 3 xii 3
- Nostrum in private practice D BARTON Gydykimas,
9 3 20
- The de eloquent of tumors E SCHWARTZ Deutsche
med Wchnsch 9 3 xli 08
- Tumorous epithelial cysts K BLOOM Arch f klin
Chir 9 cix 695
- Insulin in cancer L P ROBINSON Am J Clin
Med 9 3 xii 80
- Multiple pathology and the cancer problem W S
BARBER J Nat M Ass 923 xi 6
- Fibrosarcoma H RAE Deutsche med Wchnsch 923
xli 5
- The relation of clinical to necropsy diagnosis in cancer
and the value of existing cancer statistics H G WELLS
J Am M Ass 9 3 lxxx 737
- Epithelioma—prophylactic and curative measures
W D JAMES and V W JAMES Internat J Surg 923
xxvi 09
- Concurrent benign malignancy rare special form of skin
canceroma G Koss Beitr klin Chir 9 3 cxcv, 709

- A section of an excised pigmented mole showing early
malignancy E G G LITTLE Proc Roy Soc Med
Lond 923, xvi, Sect Dermatol 59
- Primary adenocarcinoma of the sweat glands A CHAZ
wicz Polska gas lek 9 2, 1, 970
- Refraction tests of the serum in cases of carcinoma
A KATZBERG Semana med 9 3 xii, 479
- Cancer and sarcoma A MORALINI Siglo med 9 3,
lix 277
- A case of Hodgkin disease developing in girl of 9
years who is living and in excellent health after six years of
X-ray treatment D M CORLE Med Clin N Am
923 vi, 255
- A case of lymphogranulomatosis with rupture through
the skin, with review of the literature H MEYERHOFF
Deutsche Chir f Chir 9 cxcv, 85
- The importance of sacrospinous in surgical practice
O CROVETZ Semana med 9 3 xiv, 479
- The surgical treatment of hydatid cyst D MANNING
J de chir 923, xvi, 70

General Bacterial Infections General Mycotic
Infections

- The pathology and therapy of severe, acute surgical
infectious disease A LAKE Engbl d Chir Orthop
9 2, xv 78
- Cholesterinemia in erysipelas and its relation to organ
function S NOVILLO Arch de med chir y espec
9 3 xi, 517
- Therapeutic effect of local inflammations and abscess
formation in sepsis F ROSE Munchen med Wchn
sch 9 3, lxx, 30
- New therapeutic points of view in the treatment of sep-
tic diseases H LUTHEKE Munchen med Wchnsch
9 3 lxx,
- Effect of protein therapy on septic processes R KOCK
Munchen med Wchnsch 923 lxx, 306
- The therapeutic action of bismuth in erysipelas C LAVA
potti Lancet, 923, ccv 639
- The treatment of tetanus M C MAGUILL Arch de
med chir y espec 923, 514
- Actinomycosis due to variety of causative organisms
K H EISE and R WAGNER Ztschr f Hyg Infectio-
krankh 92 xxvii 74
- Studies on the cutaneous reaction and complement fixa-
tion in actinomycosis J WALLACE Mitt d Grungeb
d Med Chir 9 3 cxcv, 55
- Actinomycosis diagnosis and treatment P A WHITE
J Iowa State M Ass 923, xxi 5
- Curative inoculation of actinomycosis F F FRIED-
MANN Munchen med Wchnsch 9 3, lxx, 76

- The treatment of anthrax infectiois A McGEARY
Ann Surg 9 3, 1 viii, 263
The treatment of cutaneous anthrax with few recurrences
on prophylaxis J C RAY N York State J M 1
viii 3 [84]

Surgical Pathology and Diagnosis

- Palpation in the outlining of organs and determining
pathologic conditions showing different degrees of density
of the same organ light touch palpation J M PORTER
Ann Clin Med 19 2, 304
A rapid technique for preparing histologic sections by the
paraffin method A D KERR J Am M Ass 1
xxx, 690 [84]
The swelling of tissues changed by disease W VAN
GUL and H W SMALL Zischfeld ges exper Med 19 3
xxxv
Cases of sarcoma of fibroconnective tissue: clinical and
anatomico-pathologic studies R D BRYANT and B
FACCHINI Policlin Rome 9 3 xxx xxxi chit 5

Experimental Surgery

- Some recent developments in surgical research J F
SAYT Pennsylvania M J 9 3, xxxv, 306

Hospital: Medical Education and History

- The modern hospital in the city plan P W FOWLER
Med Hosp 9 3, xx, 303
Converting an old house into hospital C A FRICKSON
Med Hosp 1923 xi, 30.
The relation between hospital building cost and cost of
equipment S S GOLDMAN Tex M J Hosp 1, xx, 5
Some principles common to large and small hospitals
D STEWART Med Hosp 9 3, 58
The laboratory quarters and equipment of a modern
hospital M KAHN Med Hosp 9 3, xi, 226
The laboratory—its relation to the nursing service
H J GOWENLOCK Trained Nurse & Hosp Rev 923 1, x,
36
General principles in planning departments M M
DUMAS Med Hosp 9 3, xx,
The small hospital morgue and autopsy room R
REIDAR Med Hosp 923, xi, 38
Planning the equipment of hospital laundry W T
WILKINS Med Hosp 9 3, xi, 34
What about electric stencils for the hospital? W B
URQUHART Med Hosp 9 3, xi, 389

- Hospital screening F M BLAKESTONE and J T RICE
Med Hosp 9 3, xi, 8
Hospital heating and ventilation H R IVINS Med
Hosp 9 3, xi, 41
Modern hospital illumination A L HIXON Med
Hosp 923 xi, 39
Social service problems in the hospital A H WALKER
Med Hosp 1923 xi, 304
A social service staff for women and children: solution
of the family problems of cerebral disease A C PETERS
N York M J & Med Rec 923 civi, 315
A nursery for premature infants J R HOGAN, J
Med Hosp 9 3, xi, 54
Developing satisfactory interne service C W M VOGEL
Med Hosp 9 3, xi, 206
Central school of nursing in connection with university
C I GRAHAM Med Hosp 9 3, xi, 7
Cutting the cost of institutional service C F Mc
CORMACK Med Hosp 9 3, xi, 3
The day of surgery: its sentimentalism J WAGNER
N York M J & Med Rec 923 civi, 36
Municipal physicians of Bordeaux in the middle ages
BERTIN KOLLER J de med de Bordeaux, 9 3, xvi,
208
Statutes and regulation of the Master Apothecaries of
Bordeaux P BERTIN KOLLER J de med de Bor-
deaux, 9 3, xvi, 38
Commemoration of Pasteur: centenary of Branch
Brussels med 3, xi, 4
Some of the fundamental contributions of Pasteur to
bacteriology W L HILDE California State J M
9 3, vi, 90
Pasteur's discovery of the preventive treatment for
rabies W H KILLBOCK California State M J 923,
xii, 04
Pasteur's contribution to chemistry C ALBERT Cal-
ifornia State J M 3, vi, 97
Louis Pasteur: his contribution to anthrax vaccination,
and the evolution of principle of active immunization
J G FIDEMARCO California State J M 3, xxi
Noah Webster as epidemiologist A S WARTER J
Am M Ass 9 3, lxxx, 755
The first sephelomyces H BERNARD J de med de
Bordeaux 1923 xvi, 207

Legal Medicine

- A recent decision concerning refusal to consent to opera-
tion F BA Verrill Nuch crit Dig 9 3, xxxi,
38 39

AUGUST 1923

International Abstract of Surgery

Supplementary to
Surgery Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G. C.B. Leeds
PAUL LECENE, Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES E. REED Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT Genito Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
PHILIP LEWIN Orthopedic Surgery	Nose and Throat

CONTENTS

I Authors	n
II Index of Abstracts of Current Literature	lii
III Editor's Comment	ix
IV Abstracts of Current Literature	105 160
V Bibliography of Current Literature	181 206

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave., Chicago
Editorial and Business Office: 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain: Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, London, W. C.

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Abell, I 14
 Andrews, C F 144
 Ann, K 88
 Armstrong, A 37
 Barco, P 66
 Bardalev, P 99
 Barking, G 14
 Barling, S 34
 Barony, T 14
 Bastinacchi, R 6
 Bayal, A P 68
 Benderich, L 37
 Berry, J A 24
 Bevil, A 8
 Buet, L 14
 Bloodgood, J C 24
 Boets, R H 79
 Borden, C R C 3
 Braun, W 39
 Bracco, G 1
 Brocq, P 14
 Browne, G V A 60
 Bruma, E 137
 Buman, T 26
 Buzai, A 63
 Canik, J R 39
 Chance, B 97
 Chasol, H 77
 Chasner, 68
 Charbon, P H 147
 Cheenne, L 66
 Chessa, W R 20
 Collins, F 34
 Constantino, A 163
 Corbeille, C 60
 Obit, C R 60
 Coutard, H 73
 Degraw, W F 33
 Deubers, C 6
 Davis, L 146
 Degras, P 74
 Diaz, C J 37
 Dietrich, H A 5
 Dondero, P 60
 Drenemana, P 7
 Duchovskis, S M 64
 Dunn, P 103
 Edin, T W 146
 Edridge Green, F W 66
 Fedina, S 27
 Fessau, M 34
 Favretti, J 70
 Fumterer, H 30
 Flatt, E R 39
 Flathew, M W 45
 Fox, L W 95
 Fraenkel, J 197
 Fraser, F 28
 French, R F 95
 Fromme, K 3
 Gafino, P 55
 Galino, J A 97
 Gair, M 37
 Gast, W 5
 Gilbert, T C 50
 Gargoff, S E 176
 Glogau, O
 Goodwin, A 145
 Gordon, C A 53
 Grawand, A 97
 Grainger, A
 Green, J J 68
 Grossman, J 68
 Halbertsma, T 69
 Hanneh, C R 149
 Hartmann, H 143
 Hartmann Kappel, G L 38
 Hartwich, A 8
 Hektoen, L 65
 Hermet, P 49
 Henson, G K 147
 Hey Groves, E W 27
 Himmis, F 58
 Hoders, F M 143
 Hodaria, J N 99
 Hols, G 5
 Host, P 147
 Hutchison, R 143
 Hyman, H T 6
 Ingar, S 23
 Jacques, A S 4
 Jackson, E 103
 Jackson, R H 4
 Jacobson, H C 3
 Jaczel, 35
 Josephson, A 25
 Kahn, W W 66
 Kahna, T 8
 Kaplan, A D 67
 Kappes, M
 Karatyga, W M 20
 Keger, J J 13
 Keller, A H 69
 Kessel, L 6
 Kishi, T 39
 Kleinsberg, S 68
 Koenig, F 65
 Koennecke, W 33
 Kowals, J 30
 Krittachner, H L 16
 Kuttner, H
 Kuttner, L 38
 Kuvart, O 14
 Lacasse, A 73
 LeGrange, H 107
 Lambert, R A 76
 Lande, H 16
 Lasser, P 50
 Lawrence, H 74
 Lebevre, C 37
 Leonova, L 64
 Lieb, C C 16
 Loch, W 62
 Lower, W E 59
 Linkart, R 53
 Lupo, M 63
 Luxenberger, A
 MacKinnon, G W 99
 Mandi, F 37
 Marganich, O 35
 Marasco, M G 79
 Marzeca, A 114
 Masanga, A C 43
 Mazzac, P 69
 Mayer, L 39
 Mayo, W J 42
 McGraw, S 169
 McKee, G F 149
 M Kinney, R 26
 Meisinger, W J 10
 Meyer, H 15
 Michelson, F 163
 Miquand, G 6
 Melothoff, A G 20
 Mosher, H 147
 Montenegro, V 5
 Moore, J F 5
 Moore, R F 99
 Morgan, G 14
 Mottman, J C 70
 Mouchel, A 64
 Mooren, M 69
 Mowery, W E 56
 Mueller, L 30
 Namarow, W M 20
 Nather, K 143
 Negre, D 64
 Nemoff, M J 34
 Nemova, P 143
 Novak, J 66
 Olshycki, J 169
 Palmer, D W 50
 Papan, E 59
 Passalunco, L 77
 Payr, E 20
 Peckman, M G 14
 Petersen, A J 143
 Poetal, O 8
 Perles, L 54
 Peary, W C 97
 Poyaka, T 97
 Oestrom, F 34
 Remstadt, C
 Reel, P J 147
 Rebo, E 3
 Riddell, T L 22
 Rivarola, R A 7
 Roberts, C S L 56
 Robbins, C R 3
 Roderer, C 65
 Rosenbath, B 18
 Rosenfield, H H 5
 Rosental, M A 20
 Rossi, T G 58
 Ronnola, S C 53
 Ryle, J A 76
 Rypan, H 16
 Savitis Papadopoulos, A 65
 Schaefer, W W
 Schae, A 167
 Schenck, E T 52
 Schneider, J H 73
 Schaeffer, 15
 Spalitur, 9
 Shaw, H B 99
 Smith, G G 60
 Soening, 6
 Speciale, J 58
 Spencer, H R 147
 Spink, H 67
 Sorellia, A 36
 St. Jairo, 9
 Steiger, M 7
 Stern, D 16
 Stueres, T 99
 Still, G F 28
 Stone, H B 37
 Strady, P 1 9
 Streeter, G L 30
 Sweet, J E 77
 Swift, H F 79
 Szold, Z 37
 Szynnowski, J 33
 Thompson, J L 169
 Troell, A 4
 Turnbull, H M 59
 Urban, K 16
 Van Hoober, B 54
 Verneke, H 30
 Vague, H 149
 Vogt, E 48
 Von Neergaard, K 7
 Waldenstrom, H 65
 Weibel, W 148
 Wilkerson, J H 3
 Wilkerson, P F 149
 Wihart, D J G
 Wright, H W 149
 Wright, J W 97
 Young, H M 35

CONTENTS—AUGUST, 1923

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Eye

- FOX, L. W. Heterophoria
 JACKSON, L. The Transfer of Function of the Ocular Muscles
 F. KNOX, R. F. Diminishing Accommodation Artificially Produced
 DE V. P. The Tarsal Aspect of Ocular Disease
 CHITTENDEN, L. Injections of Milk in Ocular Therapeutics
 EDWARD GREEN, F. W. Some Curious Phenomena of Vision and Their Practical Importance
 KAHN, W. W. Arthrogenous Reflex Manifestations Between the Eyes and Teeth
 POTTER, W. C. Myopia and Pseudo of the Eyelids
 LA GRANGE, H. Conjunctivitis of Anaphylactic Origin
 WARDEN, J. W. Solenostoma in Trachoma
 POTTER, F. An Epithelial Cyst of the Cornea
 GOWLAND, A. and GALLINO, J. A. A Fixation Abscess in Case of severe Endocyclitis
 CHERRY, B. The Etiology of Uveitis
 HERTZ, I. Immense Reaction of the Lens
 GALT, J. J. Factors of Safety in the Operation for Cataract
 HOFFER, J. N. The Diagnosis of Optic Neuritis Due to Syphilis Disease
 GREEN, E. Neurofibroma of the Orbit
 H. B. MOORE, R. F. BARDOL, P. and others. Discussion on the Differentiation and Prognosis of Arterio-sclerotic and Renal Retinitis

Ear

- MURKIN, C. W. Hysteria from the Standpoint of the Otolaryngologist
 C. N. Fine Paralysis of the Middle Ear
 A Preliminary Report from Animal Experimentation. Microscopic Findings
 MULLER, W. J. Diplothermic Otitis Media

Nose

- C. DE V. A. A New Technique for the Positive Destruction of the Sphenoidal Sinus and the Ethmoid Cells
 WINTER, D. J. G. Chronic Catarrh of the Nasopharynx

Mouth

- RANNEY, C. The Operation for Complicated Harelip
 LUKESBURGER, A. Plastic Surgery of the Jaw and Hard Palate
 KLEMPERER, H. Carcinoma of the Tongue

Throat

- BORDEN, C. R. C. A Clinical and Pathologic Study of Tonsils Subjected to the X Ray
 WILLIAMS, F. H. The Prompt Action of Radium Radiations in the Treatment of Small or Large Infected Tonsils and Lingual Tonsils
 REYN, E. The Treatment of Ludwig's Phlegmon by Evacuation of the Submandibular Gland
 KUTNER, O. T. Pharyngeal Tumors

Neck

- MORGA, G. Sinuses and Cystic Lesions in the Neck of Children
 MARGACE, A. Fifteen Cases of Thyroidectomy in Children
 JACKSON, A. S. and JACKSON, R. H. The Relation of the Basal Metabolic Rate to Dimensions of the Thyroid Gland
 HOFF, G. Lymphatic Gout and Lymphoma, and Their Prophylaxis
 THOMAS, A. The Structure of Gout with Particular Reference to Bacteroid Disease
 KENNEL, L. LEE, C. C. HYMAN, H. T. and LARSEN, H. Studies of Esophthalmic Gout and the Isolated Nervous System. III. A Study of Fifty Consecutive Cases of Esophthalmic Gout
 U. K. TRENDS, T. Years of Gout Surgery

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings and Cranial Nerves

- STANLEY, M. Can True Epilepsy be Cured or Improved by Roentgen Treatment
 DREYER, N. P. The Repair of Defect in the Dura and Skull, with Particular Attention to the Permanent Results—the Prevention and Cure of Traumatic Epilepsy by Repair of the Dura by Free Transplantation of Fatty Tissue
 KRAVATZ, R. A. Hydrated Cysts of the Brain in Children
 PORTER, O. Localized Symptoms from Lesion of the Left Parietal Lobe. Observations in Case of Brain Tumor Treated by Palliative Decompression

- ROSENWALTER, B. A Case of Tumor of the Cerebellum that Gave Negative Results to Tests of the Labyrinth and Labyrinthine Tract
- BLAIR, A. The Physiology and Pathology of the Prosthetic Body

Spinal Cord and Its Coverings

- SCHLESINGER, S. JARROU. The Roentgen Findings in Tumors of the Spinal Cord

Peripheral Nerves

- STRAUSS, P. J. The Treatment of Lesions of the Peripheral Nerves
- CHESNEY, W. R. The Operative Technique in Lesions of Peripheral Nerves
- VAUGHAN, W. M. Regeneration of Nerves in Clinical Tissue
- ROBERTS, M. A. The Etiology of Neurofibromatosis
- MCCORMACK, A. G. The Pathogenesis of Trophic-Nervous Skin and Bone Changes and Their Treatment

Sympathetic Nerves

- KAPPEL, M. The Etiology and Treatment of Perforating Ulcer of the Foot, with Remarks on Sympathetic
- SCHWARTZ, W. A. Post Arterial Sympathectomy in Spontaneous Gangrene

Miscellaneous

- KERRICK, J. F. and REDBELL, T. E. Lumbar Spinal Puncture and Cisternal Puncture
- ICHAIR, S. On the Danger of Leakage of the Cerebrospinal Fluid After Lumbar Puncture
- JACOBSON, H. C. and FRENCH, J. Leakage of Spinal Fluid After Lumbar Puncture

SURGERY OF THE CHEST

Chest Wall and Breast

- BERRY, J. A. Suppurative Arthritis Secondary to Acute Appendicitis
- BLOOMGOOD, J. C. The Clinical Picture of Dilated Ducts Beneath the Nipple Frequently to Be Mistaken as Doughy Worm Like Masses The Vascular Tumor of the Breast
- SILVERMAN, A. Concretizing Milk Cysts Galactocysts

Trachea, Lungs, and Pleura

- GAFF, W. Bronchial Fistula
- BRECK, O. Pleural Pressure and Lung Collapse in Artificial Pneumothorax
- JOHNSON, A. Primary Cancer of the Pleura in Man and Wolf
- MONTECRISTO, V. Malignant Tumors of the Lung
- AMERSON, A. Pulmonary Tuberculosis and Appendicitis

Heart and Pericardium

- BAZEL, F. Operation on the Cases of Cardiac Wounds

Esophagus and Mediastinum

- MATTHEY, R. Some Phases of Esophageal Stenosis

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- HAY GIBSON, I. W. A Note on the Operation for the Radical Cure of Femoral Hernia
- ERDMAN, S. Inguinal Hernia in the Male
- FRASER, F. The Principles of Surgical Treatment of Infection of the Peritoneum
- ALLEN, K. Experimental Investigations on the Gastro-Intestinal Movement in the Peritoneum

Gastro-Intestinal Tract

- STILL, G. I. Congenital Hypertrophy of the Pylorus
- KARSTEN, W. M. Syphilis of the Stomach
- PETER, E. Old and New Views in the Differentiation of Ulcer and Cancer of the Stomach
- MILLER, E. Ulcer of the Stomach as a Cause of Fever
- FRIEDBERG, H. The Surgical Treatment of Ulcer of the Stomach and Duodenum
- FRIEDBERG, H. Operative Results in Acute Gastric and Duodenal Hemorrhage
- ROBERTS, C. R. The Roentgen Ray as an Adjunct in the Treatment of Advanced Cases of Carcinoma of the Stomach
- MATTHEY, R. J. Radical Operation of the Stomach, with Especial Reference to Mobilization of the Lesser Curvature
- DANIEL, W. F. A Few Remarks Regarding the Character of Digestion After Operations on the Stomach and Intestines
- COLEMAN, F. Spastic Ileus in Grippe
- BARNETT, T. Duodenal Gastric Metastasis
- BARNETT, T. Chronic Duodenal Ileus
- KOENIG, W. and MEYER, H. Chemical and Experimental Data on Chronic Duodenal Stenosis
- KOENIG, W. Experimental Investigations Regarding Duodenal Obstruction and Atony of the Stomach
- JACOBSON, H. C. and SCHWARTZ, W. Peptic Ulcer of the Jejunum
- MATTHEY, R. J. The Pathogenesis of Mucocutaneous Neuro-Colopathy
- LEIFERTZ, C. The Treatment of Chronic Intestinal Stenosis by Cecostomy
- STONE, H. B. The Surgical Treatment of Chronic Ulcerative Colitis
- MAYOT, P. and GARA, M. An Experimental Study on the Suture of Non Perforated Sections of Intestine Following Resection
- BERCHER, L. and SELLER, K. The Spontaneous Formation of Anastomoses of the Intestine

- LEUNG, A. Pulmonary Tuberculosis and Appendicitis
- KETTERER, L. Practical Advice with Respect to the Diagnosis and Treatment of Diseases of the Digestive Tract. The Cause of the Pain 1 month after Perforating Appendectomy

Liver, Gall-Bladder, Pancreas, and Spleen

- MERZ, O. Non Parasitic Cysts of the Liver Especially Solitary Neoplastic Cysts. Unicellular Cystadenoma
- HARRIS, KENNEDY, G. L. Ascendancy of the Liver and the Bile Ducts
- MILLER, L. and KOTZ, L. The Final Result of Omentectomy in Carcinoma of the Liver
- BALM, W. Secondary Interference in Acute and Subacute Atrophy of the Liver
- LIVER, I. R. Abnormalities of the Right Hepatic Cystic and Gastrohepatic Arteries and of the Bile Ducts
- PETER, M. G. Cholecystitis and Its Complications
- PALMER, D. W. and MEKE, C. I. Gall Stone Associated with Kidney Stones
- WILLI, T. Papilloma and Adenoma of the Gall Bladder
- BROOK, P. and BLAIR, I. The Pathogenesis of Microcystic Pancreatitis
- MILLER, G. An Address on Pancreatitis and Its Association with Cholecystitis and Gall Stones
- MURRAY, A. C. The Physiopathology of the Spleen
- NASA, P. Psychic Disturbances After Splenectomy in Cases of Pernicious Anemia
- ROSE, FRED, H. H. and SCHWARTZ, E. F. An Improved Phenoltrichlorophthalein Test for Liver Function in Pregnancy and Its Toxicity
- SCHWARTZ, E. F. Some Recent Developments in Surgical Research

Miscellaneous

- HOSKIN, F. M. Subdiaphragmatic Abscess
- HARRISON, R. The Chronic Abdomen
- NATHAN, K. The Preperitoneal or Retroperitoneal Root to the Subphrenic Abscess as the Typical Operation
- ANDERSON, C. I. Primary Retroperitoneal Sarcoma. A Report of Twenty Eight Cases

GYNECOLOGY

Uterus

- PETERSON, A. J. Mixed Tumors of the Uterus
- HARRIS, H. I. Uteral Myosarcoma
- HARRIS, M. W. Chronic Endometritis
- DONALD, I. Carcinoma of the Cervical Stump. Report of Eight Cases
- COLL, T. W. and COOPER, A. Two Cases of Cancer of the Cervix Treated by Radiation Before Operation
- RICH, P. J. and CARR, P. M. Sarcoma of the Uterus

Adrenal and Peri-Uterine Conditions

- SPENCER, H. R. Ten Cases of Ovariectomy in Women over 70 Years of Age
- SERVINO, J. Ovarian Cysts and Pregnancy. The Results in Thirty Five Cases Operated upon During Pregnancy

External Genitalia

- MONROE, H. and HART, P. Cysts of the Labia Minora
- MISCELLANEOUS
- HARRIS, G. K. Gonorrhea in Women
- WELSH, W. The Treatment of Peritonsillar and Genital Tuberculosis in the Female with the Roentgen Rays
- VOIGT, I. The Healing of the Wounds of Gynecological Operation Following Previous Roentgen Treatment

OBSTETRICS

- PREGNANCY AND ITS COMPLICATIONS
- ANDERSON, H. and HART, P. Sedimentation of the Red Blood Corpuscles and Gestation
- WILLIAMS, P. F. The Glycemia Test for Pregnancy
- WILSON, W. W. Psychoses of Pregnancy and the Perinatal State
- HASSEL, C. R. The Value of Abdominal Measurements in Recognizing the Size and Maturity of the Fetus
- GILBERT, T. C. I. Territorial Pregnancy
- STREETER, G. L. Subcutaneous Implantation of the Human Ovary
- LAWLER, P. and VERMILION, H. The Serum Diagnosis of Syphilis in the Pregnant or Parturient Woman
- MOORE, J. F. Studies on the Influence of Pregnancy in Syphilis. The Course of Syphilitic Infection in Pregnant Women
- SERVINO, J. Ovarian Cysts and Pregnancy. The Results in Thirty Five Cases Operated upon During Pregnancy
- DETHLEFSEN, H. A. Rhesus During Pregnancy
- ROSENFELD, H. H. and SCHWARTZ, E. F. An Improved Phenoltrichlorophthalein Test for Liver Function in Pregnancy and Its Toxicity
- LEHART, R. Phenobarbital Sodium (Luminal Sodium) Treatment for Hyperemesis Gravidarum
- RYAN, S. C. Eclampsia
- FLETCHER, M. and QUINCY, F. Pregnancy and Nephrectomy for Bacillus
- PORTER, L. The Pathogenesis and Treatment of Apoplexy of the Placenta
- LABOR AND ITS COMPLICATIONS
- ANDERSON, B. A Safe and Practical Method of Administering Scopolamine Morphine Anesthesia in Obstetrics

- GORDON, C. A. The Management of the Third Stage of Labor
 GALTANI, P. Transperitoneal Cesarean Section of the Lower Uterine Segment in Fifty Cases
 MANN, W. E. Cesarean Section under Local Anesthesia

Puerperium and Its Complications

- SCOTT, A. Concerning Milk Cysts Galactocyst
 ROBERTS, C. S. L. Acute Puerperal Inversion of the Uterus
 BROWN, E. Serotherapy and Chemotherapy in Puerperal Infection

Newborn

- MARIAGE, A. Fifteen Cases of Thyrotoxicosis in Newborns
 BROWN, G. V. A. and CORRIE, C. Observations with Comments, on Study of the Urinary Tract of Eighty Fetuses and Young Infants

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

- PALMER, D. W. and McKIN, G. F. Gall Stones Associated with Kidney Stones
 F. VIGANI, M. and QUERQUEN, F. Pregnancy and Nephrectomy for Echinococci
 SPICER, F. A Contribution to the Study of Hypernephroma
 ROSS, F. G. Remarks on six Cases of Nephroptosis
 NICHOLSON, M. J. Renal-prological Methods for the Recognition of Poles of the Kidney—Pneumoperitoneum
 YOUNG, H. M. A Suggestion for Standard Technique in the Application of the Phenol phosphotungstic Test in the Determination of the Relative Functional Capacity of the Kidneys
 HIRSH, F. Renal Counterbalance. An Experimental and Clinical Study with Reference to the Significance of Disease Atrophy
 PAPP, E. Ligation of the Kidney Pelvis
 CALLE, J. R. Megalo-Ureter. The Importance of the Uretrovesical Valve

Bladder, Urethra, and Penis

- KROE, F. and TUBERILL, H. M. Angiomyoma of the Urinary Bladder
 LOWER, W. E. The Disposition of the Ureters in Certain Abnormal Conditions of the Urinary Bladder
 COLE, C. R. and SMITH, G. G. Chronic Urethritis in Women

Miscellaneous

- BROWN, G. V. A. and CORRIE, C. Observations, with Comments, on Study of the Urinary Tract of Eighty Fetuses and Young Infants

- DONOHUE, P. Causes of Error in the Radiological Diagnosis of Calculus of the Urinary Tract
 KRETZSCHMAR, H. L. Kretzschmar's Hemorrhage
 STEIN, D. and RIVIER, H. The Local Wassermann Reaction. A New Diagnostic Aid in Primary Syphilis

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

- Condition of the Bones, Joints, Muscles, Tendons, Etc.
 BASTIENELLI, R. On the Diagnostic and Therapeutic Importance of Some Typical Tender Bone Points
 DAMERY, C. and MINOY, G. The Diagnosis of Syphilis of the Osseous Parts of the Long Bones
 HARTWICK, A. Joint Mice
 KAHARA, T. The Anatomical Structure of Nerve Trunks
 LOEHR, W. A Contribution on So-Called Myositis Ossificans Progressiva
 COVATTORE, A. A Case of Traumatic Cystitis Vesicae
 MICHELSON, F. Primary Infectious Osteomyelitis of the Ribs
 LERO, M. Development of the Upper Vertebra and Occipitalization of the Atlas
 KAGE, D. Three Cases of Sacralization of the Fifth Sacral Vertebra
 LEONTEWA, L. Spodysitis in Children
 DECHON, S. M. Traumatic Spodysitis
 MOCHER, A. and ROEMER, C. Some New Ideas with Respect to Congenital Scoliosis
 SARA, H. PANDORON, A. Can Fixed Scoliosis Be Cured? The Value of Abbott's Method
 BUZZI, A. Hydrated Cyst of the Hip Bone
 WALDENSTROM, H. On Coxal Plegia
 KOEHL, T. Internal Injuries of the Knee Joint
 NOVY JOSEPHOV. Anatomical Types of Flat Foot
 SOVETAS. Contribution upon Kockler Disease of the Head of the Second Metatarsal
 BAICO, P. Some Details in the Disposition of the Plantar Fascia
 SWIFT, H. F. and BOOTH, R. H. The Influence of Syphilitic Subluxation upon the Articular of Rabbits Inoculated with Non-Haemolytic Streptococci

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- KAPLAN, A. D. Anesthesia of the Brachial Plexus
 SCHERER, A. Snapping Finger
 SEID, B. The Operative Treatment of Tuberculous Spodysitis
 FRANKEL, J. Lucifol. Operation for Malum Valgum and Hollow Claw Foot

Fractures and Dislocations

- GRUBMAN, J. Fractures of the Head and Neck of the Radius
 KRETZSCHMAR, S. Spodysitis



- BEJTEL, A. P. Fractures of the Pelvis
 CHAMBERLAIN Congenital Location of the Hip in Hemiplegic Girl

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

- VIVONA, H., and HERBERT, P. Sedimentation of the Red Blood Corpuscles and Gestation
 MCGUIRE, S. Mesenteric Thrombosis, with Report of Two Cases
 OLSEN, C. J. Fat Embolism

Blood and Transfusion

- MAURIEL, P. and MOUTERAU, M. The Mechanism of Variations in the Number of Leucocytes
 HALBERTSMA, T. Concerning the Quantity of Blood Administered in Blood Transfusion

Lymph Vessels and Glands

- THOMPSON, J. E. and KEILLER, V. H. Lymphangitis of the Neck
 MOTTIDAM, J. C. Some Observations upon the Histologic Changes in Lymphatic Glands Following Exposure to Radium

SURGICAL TECHNIQUE

Anesthesia

- V. HOSNEY, B. A Safe and Practical Method of Administering Scopolamine-Morphine Anesthesia in Obstetrics
 MOWEN, W. E. Cesarean Section under Local Anesthesia
 KAPLAN, A. D. Anesthesia of the Brachial Plexus
 VON NEERGAARD, A. Experimental Research on Electrocatharsis

PHYSICO-CHEMICAL METHODS IN SURGERY

Röntgenology

- BORRIS, C. R. C. A Clinical and Pathologic Study of Tumors Subjected to the X Ray
 STENZEL, M. Can True Epilepsy Be Cured or Improved by Röntgen Treatment
 SOALITZKY, S. J. The Röntgen Findings in Tumors of the Spinal Cord
 ROBERTS, C. R. The Röntgen Ray as an Adjuvant in the Treatment of Advanced Cases of Carcinoma of the Stomach
 WHEELER, W. The Treatment of Peritoneal and Genital Tuberculosis in the Female with the Röntgen Ray
 VOGT, E. The Healing of the Wounds of Gynecological Operations Following Previous Röntgen Treatment
 VAN DERVY, M. J. Röntgenological Methods for Recognition of Piles of the Anus—Pneumopneumococcosis
 DOMINGO, P. Cases of Error in the Röntgenological Diagnosis of Calculus of the Urinary Tract

- SCHEIDT, J. H. Intensive Deep Röntgen Irradiation—Its Principles and Clinical Application
 LACHMAGNE, A. and COUTARD, H. The Effect of Radiation of the Oocytes on Fertilization and Gestation
 Responsibility of the Physician in the Case of an X Ray Burn

Radium

- DEGRAS, P. The Value and Use of Beta Radium Rays
 LAWRENCE, N. Experimental Research Work in Radium Therapy Including Death, Retardation of Growth, Prolongation of Life, Determination of Sex, Sterilization, and Artificial Parthenogenesis, Reproduction Without the Male
 WILLIAMS, F. H. Prompt Action of Radium Radiations in the Treatment of Small or Large Infected Tonsils and Lingual Tonsils
 EDY, T. W. and GOODWIN, A. Two Cases of Cancer of the Cervix Treated by Radium Before Operation

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- KRISTENSEN, H. Carcinoma of the Tongue
 MORGAN, G. Swabs and Swellings in the Neck of Children
 JOSEPHSON, A. Primary Cancer of the Placenta in Man and Wife
 FROMAN, S. Inguinal Hernia in the Male
 KARATZIS, W. M. Syphilis of the Stomach
 BARNETT, T. Duodenal Gastric Motility
 HUTCHINSON, R. The Chronic Abdomen
 FLOTOW, M. W. Chronic Endocarditis
 HENRIOT, G. K. Gonorrhea in Women
 COLE, C. R. and SMITH, G. G. Chronic Urethritis in Women

HARTWICK, A. Joint Mice

- F. COTT, J. and KYLE, J. A. Cases of Delayed and Immediate Anaphylactic Shock With Note on the Circulatory Phenomena
 LAMBERT, R. A. Oriental Sore (Cutaneous Lesions) in the United States
 GIBSON, S. S. The Pathogenesis and Treatment of Spontaneous Gangrene
 PARZENOW, L. The Causation of Neoplasms by Tar

General Bacterial, Mycotic, and Protozoan Infections

- CHAO, H. The Treatment of So-Called Surgical Tuberculosis

Experimental Surgery

- SWIFT, J. E. Some Recent Developments in Surgical Research
 SWIFT, H. F. and BOOTS, R. R. The Influence of Sodium Salicylate upon the Arthritis of Rabbits Inoculated with Non Hemolytic Streptococci

MARTINSON, M. C. The Role of the Oxidizing Ferments in the Mechanism of Thermogenesis and Fever

79	Surgeon Who Agrees to Perform Operation Does Not Guarantee Results	179
	Responsibility of the Physician in the Case of an X-Ray Burn	80
	Responsibility of the Surgeon in the Case of Burns from Hot Water Bag	80

Medical Jurisprudence

Physician's Right to See Employer for Services Performed (III) Request for Employee Not Affected by Compensation Law

79

BIBLIOGRAPHY

Surgery of the Head and Neck

Head
Eye
Ear
Nose
Mouth
Throat
Neck

8	Abnormal A. Vein and Ureter	193
8	Bladder, Uterus and Vagina	197
8	Genital Organs	197
8	Miscellaneous	193

Surgery of the Nervous System

Brain and Its Coverings Cerebral Nerves
Spinal Cord and Its Coverings
Peripheral Nerves
Sympathetic Nerves
Miscellaneous

81	Surgery of the Bones, Joints, Muscles, Tendons	195
81	Conditions of the Bones, Joints, Muscles, Tendons	195
81	Fractures and Dislocations	191
81	Orthopedics in General	191

Surgery of the Chest

Chest Wall and Breast
Trachea, Lungs and Pleura
Heart and Pericardium
Esophagus and Mediastinum
Miscellaneous

87	Surgery of the Blood and Lymph Systems	201
87	Blood Vessels	201
87	Blood and Lymph System	201
87	Lymph Vessel and Glands	201

Surgery of the Abdomen

Abdominal Wall and Peritoneum
Gastro-Intestinal Tract
Liver (and Bladder, Pancreas and Spleen)
Miscellaneous

89	Surgical Technique	203
89	Operative Surgery and Technique Postoperative Treatment	203
89	Antiseptic Surgery Treatment of Wounds and Infections	204
89	Amputations	204

Gynecology

Uterus
Adnexal and P. Uterine Conditions
External Genitalia
Miscellaneous

91	Physico-Chemical Methods in Surgery	204
91	Röntgenology	204
91	Radium	204

Miscellaneous

Obstetrics
Pregnancy and Its Complications
Labor and Its Complications
Puerperium and Its Complications
Newborn
Miscellaneous

93	General Facilities—General Physiological Conditions General Bacterial, Mycotic and Parasitic Infections	205
93	Diagnosis	205
93	Experimental Surgery	205
93	Hospitals Medical Education and History	205
93	Medical Jurisprudence	205

EDITOR'S COMMENT

THE conscientious surgeon who wishes to keep abreast of American surgical literature is frequently startled at the large total of the number of periodicals devoted to the subject of medicine and surgery. Fortunately they are not all of equal interest or importance else his task would be impossible.

American journals may be divided into four groups: those devoted to the general field of medicine and surgery and its specialties; those devoted to general surgery; those devoted to one or more of the special fields of surgery; and those devoted to the allied medical sciences, such as anatomy, physiology, pathology, etc.

The first group contains the names of some of our oldest and best known periodicals. The monthly *American Journal of the Medical Sciences*, edited by John H. Muzzey Jr., was established in Philadelphia in 1870 and has always carried to its readers something of the spirit and atmosphere of that historic and distinguished center of American medicine. In recent years subjects pertaining to the field of internal medicine have considerably outnumbered subjects of distinctly surgical interest in its pages.

The weekly *Journal of the American Medical Association*, edited by George H. Simmons, is too well known to require comment as to its character or contents. It is the official journal of the American Medical Association, and its columns are open alike to the general practitioner and to the specialist in every department of medicine and surgery. It is invaluable to both the surgeon and the internist. In addition to the section devoted to original articles it contains excellent brief reviews of the more important articles appearing in other American journals and in foreign journals.

The semi-monthly *New York Medical Journal and Medical Record*, edited by Gregory Strangell, was established in 1843 as the *Medical News and Library*. Its editors have adopted the policy of featuring in one issue of each month some specific general subject. Physiotherapy, gastro-enterology, and endocrinology are among the subjects recently emphasized. This journal, like the *American Journal of Medical Sciences*, loses some of its potential value in presenting few illustrations in its columns.

The monthly *Bulletin of the Johns Hopkins Hospital*, founded in 1889, contains details of hospital and dispensary practice, abstracts of papers read and other proceedings of the Medical Society of the Hospital and other matters of general interest in connection with work of the hospital. It is beautifully illustrated, printed on fine paper and reflects most creditably the high standards in medicine and surgery for which the Johns Hopkins Medical School has always stood.

In addition to the journals mentioned there is a considerable number of journals more definitely local in their character and interest, and consequently of more limited scope and circulation. The excellent *Boston Medical and Surgical Journal*, a weekly periodical founded in 1829, edited by Walter P. Bowers, the monthly *Therapeutic Gazette*, edited by Hobart Amory Hare and Edward Martin, the monthly *Southern Medical Journal*, edited by M. V. Dabney, the *Canadian Medical Association Journal*, edited by A. D. Blackader, and *Northwest Medicine* are the more important members of this group.

In addition to these national and sectional journals, there is also a large number of state journals published under the auspices of the various state societies. Some of these, by reason of their consistent excellence, deserve special mention. *Minnesota Medicine*, edited by Carl B. Drake, the *California State Journal of Medicine*, edited by W. E. Mungrave, the *New York State Journal of Medicine*, edited by Nathan B. Van Etten, the *Atlantic Medical Journal* (Pennsylvania and Delaware), edited by Frederick L. Van Sickle, the *Wisconsin Medical Journal*, edited by Rock Sleyter, and the *Ohio State Medical Journal*, edited by Don H. Martin, are the leaders in this group.

Of the journals devoted to general surgery three stand in a class by themselves: the *Annals of Surgery*, the *Archives of Surgery*, and *SURGERY, GYNECOLOGY AND OBSTETRICS*.

The monthly *Annals of Surgery*, edited by Lewis Stephen Pilcher, is our oldest surgical journal. Its long and distinguished career of usefulness to the surgical profession needs no added emphasis.

The bi-monthly *Archives of Surgery*, edited by Dean D. Lewis, was established in 1920 to

enlarge the surgical horizon and assist in establishing surgery on a sounder basis," to help develop the fundamental branches of surgery by affording a greater opportunity for the publication of original investigations directly connected with the field of surgery.

SURGICAL GYNECOLOGY AND OBSTETRICS, edited by Franklin H. Martin and Allen B. Kanavel, needs no introduction to our readers. These three journals, international in their horizon, are indispensable to the man seriously interested in surgery.

Of particular interest in this month's contributions to the Abstract is a group of articles on the surgery of the stomach. A consideration of the indications for and technique of radical operations upon the stomach by W. J. Mayo (p. 132) a résumé of the technique employed and results secured in 467 cases of ulcer of the stomach and duodenum operated upon by Finsterer (p. 130) a report on the character of digestion after operations upon the stomach and intestines in dogs by Duguey (p. 133) and a discussion of the results of surgical treatment in acute gastric and duodenal hemorrhage, also by Finsterer (p. 130) are of especial importance. An abstract of Still's paper (p. 128) on congenital hypertrophy of the pylorus, appearing in the *British Medical Journal* sums up the results of the observations made by Still on 248 cases—a

remarkable experience to have fallen to the lot of one man.

A discussion of the surgical treatment of chronic ulcerative colitis by Stone (p. 137) emphasizes the increasing tendency to apply more certain and definite methods in the treatment of this obstinate disease.

Chasoul's article on the treatment of surgical tuberculosis by roentgen radiation (p. 177) will be of interest to every surgeon. The author believes radiation affords a valuable adjunct to other recognized methods of treatment.

Burns's discussion of serotherapy and chemotherapy in puerperal infection (p. 157) indicates the constant search for better methods of treating this disastrous complication. Burns believes that intramuscular and intravenous injections of sera and of bactericidal preparations are of definite value if employed at the proper time.

The pre-operative application of radium in cancer of the cervix (Eden and Goodwin, p. 146) the effect of roentgen radiation of the ovary on fecundation and gestation in rabbits (Lacazeigne and Coutard, p. 73) experimental investigations of the effect of radium on the lymph glands (Mottram, p. 170) and on the metamorphosis of insect life (Lawrence, p. 174) are subjects that will interest both the gynecologist and the worker in X-ray and radium therapy.

A brief report of fifteen cases of thymectomy by Marique (p. 14) suggests the feasibility of this surgical procedure under certain conditions.

INTERNATIONAL ABSTRACT OF SURGERY

AUGUST 1923

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

EYE

Fox, L. W. Heterophoria. *Am J Ophth* 9:3

Fox states that heterophoria is a constant accompaniment of binocular single vision, although it may not always cause symptoms. The production of symptoms is due to general run down condition as in fatigue, exhaustion from disease, or improperly fitted glasses.

Stoddard is quoted as stating that if lateral deviations are complicated by hyperborea, the vertical deviation should be corrected first as the lateral will then probably correct itself. Quoting Schwermits, Fox emphasizes the fact that the muscles should be tested after the refractive error has been fully determined and the full correction on. Frequently the patient will accept greater correction of hypermetropia at the postcycloplegic examination if a prism is properly placed to correct the heterophoria.

THOMAS D. ALLAN, M.D.

Jackson, E. The Transfer of Function of the Ocular Muscles. *Am J Ophth* 9:5, 7

The author discusses the transference of muscles in general and reviews in particular the history of transference of the ocular muscles.

When ptosis is present, either the superior rectus or the frontalis is usually employed. When the superior rectus is paralyzed, the upper portions of the internus and externus may be used being slit back from their insertion about $\frac{1}{2}$ cm and attached to the paralyzed tendon close to its insertion or to the sclera. Similarly the inferior rectus may be replaced by portions of the internus and externus.

If the internal or external rectus is paralyzed, the median or lateral portion of the superior and inferior rectus may be used similarly. If the superior oblique is paralyzed, the temporal portion of the superior rectus is given a slightly different insertion. If there is complete third-nerve paralysis, the superior

oblique can be removed from its normal attachment and sutured to the tendinous attachment of the internus, the pulley cut away and the muscle shortened.

THOMAS D. ALLAN, M.D.

French, R. T. Diminishing Accommodation, Artificially Produced. *J I State M Soc* 9:3
Sta. 35

French reports some interesting observations on the use of mydriatics and cycloplegics. A questionnaire sent out to many ophthalmologists showed that 75 per cent employ tropine, and 20 per cent homatropine in the cases of children while 90 per cent employ homatropine in the cases of adults. When homatropine is used, the power of accommodation is lost in about forty-seven minutes, while with the use of tropine, one hundred and thirteen minutes are required. With the use of homatropine, maximum dilatation of the pupil occurs in twenty-seven minutes, and with the use of tropine it occurs in forty-three minutes. The general erage of time required for the loss of accommodation shows that homatropine is more quickly effective. After the matulation of essence the power of accommodation begins to return before the sphincter of the pupil responds.

Vernon W. WATSON, M.D.

Dunn, P. The Toxic Aspect of Ocular Disease. *Lancet* 9:3 col. 696

The author calls attention to the toxic action of the colon bacillus and the relation of a putrefactive intestinal condition to ocular disease. He states that thyroid insufficiency may be translated into failure of the thyroid to protect the body against a source of toxemia, and that beriberi also has been the custom to look for a recognized focus of septic infection such as the teeth, tonsils, etc.

The possibility that an endocyclitis may arise from another source of toxemia, in the course of which hypothyroidism manifest has been overlooked. As notable example of the fact that the

chary body is peculiarly responsive to the effects of toxic foci, Dunn cites the condition known as chronic endophthalmitis, and notes that closely allied to these symptoms are those accompanying interstitial keratitis in children. In the latter cases confirmatory evidence of syphilitic taint is often lacking. The results of the author's treatment of parenchymatous keratitis in children, which includes rest in bed, generous diet, and the administration of 5 gr of thyroid gland twice daily has strengthened his belief that this condition is mainly toxic manifestation.

In addition Dunn advances the theory that the condition known as sympathetic ophthalmia may be of toxic origin, the focus of infection being the intestinal tract. The causal agent may be a saprophytic organism which becomes virulent only when exposed to a toxic element. In the presence of intestinal stasis, the colon bacillus, normally saprophytic, becomes pathogenic and completes the vicious circle of pervading *V. parvum*.

In the treatment of toxemia arising from intestinal putrefaction the author uses a benzene derivative (dimethyl isomethylphenol, which destroys the putrefactive organisms in the intestines and allows the bacillus coli to assume their normal character. A. B. DICKMAN, M.D.

Christman, L. *Injection of Milk in Ocular Therapeutics* (Les injections de lait en thérapeutique oculaire) *Presse Méd. Par.* 923, xxxi, 78.

Protein therapy seems to have given its best results in certain diseases of the eye.

Christman refers to a overlooked thesis on milk therapy in the Russian literature by S. Atkova. Atkova. This author collected 34 cases of various affections of the eye which are treated by intramuscular injections of milk. Good results are obtained in 25 (85 per cent). The best effects were observed in affections of the visual tract and cornea.

Milk injections have been of great benefit in gonococcal conjunctivitis in the adult. Scrofulous keratitis is also easily influenced, but in parenchymatous keratitis the effects are much less constant. The injections have no marked influence on the process of interstitial infiltration of the cornea. Herpes of the cornea and the keratitis complicating ophthalmic zona seem to be favorably influenced. Very good results have been obtained in acute iritis, but in chronic endophthalmitis the outcome has been less favorable. In infections of the eye consecutive to injuries or operations, the results were excellent.

In the technique used by the author fresh milk is boiled for four minutes and then injected in the flank or thigh muscles at temperature of 37 to 38 degrees C. For adults the dose ranges from 1/2 to 10 cc. In the cases of children higher dosage is generally used as weak dosage has little effect. The injections are repeated at intervals of two or three days. It is generally best to wait until the

reaction provoked by one injection has fully subsided before making another. The total number of injections should not exceed five. The maximum effect follows the first injection.

Although milk injections are usually not dangerous, it is well to be prepared for any grave reaction which might result. Such injections should not be given in the cases of persons who are cachectic or those with cardiac disease, advanced arteriosclerosis, tuberculosis, or nephritis. W. A. BARNUM.

Edridge-Green, F. W. *Some Curious Phenomena of Vision and Their Practical Importance* *Med. Press* 923, civ, 34.

The visual purple is found only in the rods. Therefore it is considered not essential to vision because only cones are found in the fovea. The rods and cones dip into a thin layer of fluid which is kept in place by the external limiting membrane. The visual purple diffuses through this fluid and is distributed to every part of the outer layer of the retina. Visual purple is regenerated from the pigment cells and most rapidly when exposed to light. It has been possible to take photographs by means of the visual purple. A rabbit retina was exposed to a window with bars. The parts of the retina corresponding to the light parts of the window are bleached. The decomposition of the photo-chemical film sensitized by the visual purple stimulates the ends of the cones, a visual impulse being set up which is conveyed through the optic nerve fibers to the brain. When the light is diminished, the visual purple is not used and accumulates.

The movement of the after image is due to a movement of the eye itself or the compression of the globe by the muscles squeezing the photo-chemical film. There is a very distinct difference between moving the eye from one object to another and moving an object before the eye. There are six stages noted in observing a bright object for short duration, due to the fact that cones are more numerous in the fovea and that the visual purple must flow in from the periphery. The old theory that the rods are for perception in dim light is considered wrong because it is based on misstatements. There is no animal with only rods or cones in the retina. The periphery of the retina is not color blind. In dark adaption the eye is not totally color blind. VERNON WILCOX, M.D.

Kahn, W. W. *Ashenopic Reflex Manifestations Between the Eyes and Teeth* *J. Am. M. Ass.* 923, lxxx, 34.

Kahn reports nine cases of ashenopia due to decayed teeth, in which refraction test had been made very carefully the symptoms of eye strain had not been relieved by repeated instillations of atropine and the refraction was determined again with the use of stronger cycloplegic. A careful physical examination in all cases was negative. In several cases the dentist reported that the teeth were in good condition.

amination showed disease of the teeth. After the removal of the diseased teeth the symptoms of asthenopia and neurasthenia disappeared.

Four cases of pain in or about the teeth or gums are also reported after refraction the pain disappeared. One case that of 19-year old stenographer it was necessary to prescribe additional plus lenses for near work. *Annals Wescott M D*

Posey W. C. Alopecia and Poliosis of the Eyelids. *J Am M Ass* 9:3 1912, 304

Posey reports case of alopecia and another of poliosis of the eyelids and reviews the literature. The case of alopecia is of interest because it was without local inflammation of the lids. In the case of poliosis there was no history of injury or shock. The length of time elapsing from the date of shock to the appearance of the discoloration varies from a few hours to several months. In severe cases of endocyclitis there may be bleaching of the cilia of the lids. *Annals Wescott M D*

LeGrange, H. Conjunctivitis of Anaphylactic Origin (Conjunctivite d'origine anaphylactique). *Presse med* Par 9:3 1911

LeGrange reports a case of conjunctivitis which was due undoubtedly to naphylaxia. For ten years the patient had suffered from severe attacks of urticaria with swelling of the eyelids, chemosis, and itching of the conjunctiva. These always came on when he was bringing in his wood supply from the forest. A skin test with finely powdered oak bark was followed by decrease in the leucocyte count, an urticarial rash, and pruritus. When the patient again carried in wood after recovery from this test the symptoms recurred. *Annals Wescott M D*

Wright J. W. Solarization in Trachoma. *Am J Ophth* 9:3 1919

Acting upon the principle that heat light and drying are among the most potent bactericides, the author has been using them as therapeutic agents in the treatment of trachoma. The results have been encouraging. In addition to the usual local applications to the ulcers and the conjunctiva concentrated light from the sun is employed when possible and when not possible the concentrated light from an electric bulb.

Concentrated solar rays are much more potent on ulcers than artificial light. Great care must be exercised that the heat is not too great. The length of time it will be safe to apply the rays to one spot such as corneal ulcer can be determined by testing them on the back of the hand. A convex or diopter convex lens is used for concentration. Every part of the granulated conjunctiva should be passed over slowly.

A theory as to the action of the rays is offered. Their bactericidal effect and the stimulation they exert on the conjunctival glands causing absorption of the granules are probable factors. The rays are applied twice a week. Rarely more than three ap-

plications have been found necessary to clear up an ulcer. As soon as the gray ragged edges of the trachomatous ulcer present a clean cut depression with a small lens of cornea running to it from the conjunctival margin the radiation is stopped.

A. B. DYERMAN M. D.

Pojalea, F. An Epithelial Cyst of the Cornea (Quist epithelial do córnea). *Prog de la d Madrid*, 9:3 1911, 86

Epithelial cysts of the cornea are extremely rare. In an interesting case observed in the author's clinic there was a perforating traumatic lesion of the ciliary body with only slight symptoms of cyclitis. The cornea showed slight contusion which appeared to involve only the epithelial layer. Under treatment, the inflammation of the ciliary body decreased, but round transparent mass appeared in the cornea which had the clinical aspect of a traumatic epithelial cyst. Later symptoms of cyclitis developed anew and the epithelial cyst progressed to the extent that it deformed the eye and suggested a small partial staphyloma. The cystic distention of the cornea and the ciliary lesion ultimately caused an inflammatory condition which led the author to enucleate the eye to prevent sympathetic disturbances.

Histologic examination showed that the trauma involved only the epithelial layer and Bowman's membrane. Rupture of Bowman's membrane was followed by herniation. *W. A. BROWN*

Gowland A. and Gallino, J. A. A Fixation Abscess in Case of Severe Iridocyclitis (Absceso de fijación en un caso de iridociclitis grave). *Rev Soc med argent* 9: 1911, 183

The patient, man of 18 years, received perforating wound of the cornea of the right eye at the limbus. The further evolution of the case led to the diagnosis of traumatic iridocyclitis. Atropine, warm fomentations, aspirin and mercurial injections were ordered. The condition was such that enucleation seemed indicated. The remedial measures mentioned and daily intramuscular injections of 0.5 cc. of milk were without beneficial effect.

As last resort before operation the authors made injection of essence of turpentine to cause a fixation abscess in the thigh. Severe symptoms followed but improvement in the eye was noted from the next day. The pain completely ceased and vision improved. Locally the abscess evolved characteristically with the formation of a large collection of pus. The pus was drained. By the ninth day there was complete disappearance of the eye symptoms and the abscess in the thigh was in process of cicatrization. *W. A. BROWN*

Chenac, B. The Etiology of Uveitis. *Atlantic M J* 9:3, 1911, 528

Chenac describes uveitis as an endophthalmitis because, while one part of the uveal tract may be involved to a greater degree than the others, there

now occlude under the conjunctiva ten minutes before making the incision by giving a sedative enema an hour before operation, and by avoiding nervousness or haste in the presence of the patient. Irrigation of the anterior chamber to wash out remnants of cortex is indicated except in the case of a known fluid vitreous or the presence of traction of vitreous.

A buphthalmic bandage is applied by Ring. Cataract mask should be left in place for seventy-two hours. At the time of the first inspection, 1 per cent atropine and 5 per cent protargol should be instilled. The bandage should then be reapplied for two days and the patient allowed to get up. On the fifth day the unoperated eye may be uncovered and on the tenth day the patient may be discharged from the hospital.

Iritis and iridocyclitis should be treated by local remedies and large doses of betamethylamin. Resorption of cortical masses is promoted by the use of warm compresses and diosmin but diosmin may act as an irritant if used before the fourth week after operation.

The use of silver nitrate solution instead of lunar caustic is advised. A. F. DUDOX, M.D.

Hoffman, J. N. The Diagnosis of Optic Neuritis Due to Sinus Disease. *Arch. of Int. Med.* 9:3, 1914.

The author is great stress on the importance of thorough physical examination. He states that the less temporizing is not urged but a careful effort should be made to find the cause of the condition. The visual fields are the only characteristic findings of optic neuritis due to diseased posterior sinuses. These findings show an absolute scotoma; a large area of lat. scotoma. THOMAS D. ALLEN, M.D.

Stieren, E. Neurofibroma of the Orbit. *Am. J. Ophth.* 9:3, 1914.

The patient from whom the tumor described was removed was first three months previous to the onset of the symptoms. At this time he showed 6 diopters of hypermetropia; the eye affected was unpaired with diopters in the other eye. Three months later the hypermetropia had increased to 5 diopters and vision had decreased slightly although the fields remained normal. One year later the wearing of plus diopter sphere as necessary and the color fields were greatly reduced. The fundi fields remained normal.

The usual method of ruling out of etiological diseases and general conditions was used thoroughly and the diagnosis of tumor of the orbit was made on the following findings: (1) slight and continual increase of proptosis; (2) light and increase of optic neuritis; (3) some opacity of the retina; (4) increasing hypermetropia; (5) diplopia; and (6) negative physical examination.

At operation the orbit was entered from the temporal side after resection of portion of the orbit rim and the tumor mass removed with the fingers. The postoperative result was very satis-

factory. The hypermetropia receded, the vision and the excursion of the eye improved, and the condition of the optic nerve and retina returned to normal. The pathologist's report was neurofibroma. The author does not venture an opinion as to the nerve from which it originated. THOMAS D. ALLEN, M.D.

Shaw, H. B., Moore, R. F., Bardley, P., and Others. Discussion on the Differentiation and Prognosis of Arteriosclerotic and Renal Retinitis. *Arch. Ophth.* 9:3, 1914.

This is an abstract of a discussion, the main points of which were as follows:

There is no such close relationship between changes in the retina and disease in the kidneys as has been commonly supposed.

In arteriosclerotic retinitis changes are produced in the arteries by the action of a slow poison, and because of these changes there are occasional slight hemorrhages.

In renal retinitis so called, there is more severe toxemia which may or may not be of renal origin and may at first cause changes in one eye only but subsequently affects the other eye also. These changes are evidenced by engorgement of the blood vessels, fuzzy white spot, star formation around the macula, large and small hemorrhages. When this finding is associated with signs of retinal arteriosclerosis it indicates that a chronic toxemia has been present and that an acute toxemia has developed. THOMAS D. ALLEN, M.D.

EAR

MacKenzie, G. W. Headache from the Standpoint of the Otolologist. *Ann. Otol. Rhin. & Laryng.* 9:3, 1914.

Middle ear suppuration rarely produces headaches, but when the suppuration extends beyond the confines of the middle ear headache is one of the most common symptoms.

Headache may occur in both acute and chronic mastoiditis. It is usually unilateral but may be bilateral. It is due, no doubt, to the filterable bacterial toxins finding their way to the general circulation and also to these same toxins reaching the dura mater along the course of the petrosal lymphatics and producing there an extradural irritation.

Headache from simple mastoiditis the author believes is not especially common. Even a case of mastoiditis, simple or chronic, with persistent headache even though the mild one be is inclined to think of complication present or impending.

The more common complications of middle ear suppuration and mastoiditis are abscess of the inner ear, extradural abscess, petrous abscess, subdural abscess, brain abscess (superficial and deep), thrombophlebitis of the sigmoid, the superior or the inferior petrosal sinus, circumscribed purulent leptomeningitis, diffuse serous meningitis or meningismus, and diffuse suppurative meningitis or encephalitis. In none of these complications is headache absent.

Kno ledge of this fact should prompt the physician to view any case of middle ear suppuration presenting the symptom of headache as suspicious and as demanding an exhaust of logic examination.

I summarize the author emphasizes the following points:

1. Uncomplicated middle-ear suppuration, both acute and chronic, headache is not the rule and in those cases in which it occurs it is never pronounced.

2. Uncomplicated mastoid empyema with insufficient drainage headache is fairly common.

3. In uncomplicated mastoid empyem with ample drainage headache is never severe because of the mastoid involvement alone.

4. In every case of middle ear suppuration, with or without mastoid involvement the occurrence of headache should prompt the physician to suspect immediately one or another of the several complications referred to.

5. Headache is the most common symptom of every kind of intracranial complication of middle-ear suppuration, and for this reason its presence should always be regarded with suspicion.

MacKenzie believes that the study of headache at the eye ear nose and throat specialist more important than the neurologist to overlook syphilis as etiological or contributing factor.

Glogau, O. Nicotine Poisoning of the Middle Ear: A Preliminary Report from Animal Experimentation and Microscopic Findings. *Laryngoscope* 9 3 XXXIX 36

The author reviews briefly the history of the nicotine habit and its effect on man from the time John Nico, the French ambassador to Portugal, presented the ground pepper of the magic Indian plant tobacco, to Queen Catherine de Medici, in 1560.

The report is an introductory one describing the author's technique of experimentation on guinea pigs and on record the work already done.

Glogau concludes by stating that nicotine poisoning of the inner ear is characterized by certain pathological changes of the nuclei of the cells of the vestibular ganglion of Scarpa, but he admits that this statement may require considerable modification when the final results of his observations have been obtained.

W. B. BRADY, M.D.

Meibinger W. J. Diphtheritic Otitis Media. *California State J. M.* 9 3, XII, 3

Twelve cases of diphtheritic otitis media are reported. Only one of them was of the virulent type. All of the patients recovered.

The author states that the condition described is not rare although very little is found in the literature relative to it. There is nothing peculiarly characteristic in the symptoms of middle ear infection due to either the virulent or the non virulent Klebs-Loeffler bacillus.

The condition could be recognized more easily if cultures were made routinely in all cases of middle-ear infection.

O. M. ROTT, M.D.

NOSE

Granger, A. A New Technique for the Positive Identification of the Sphenoid Sinus and the Ethmoid Cells. *J. Radiol.* 1913, IV 35

The author's work is based upon experimental work with dried skulls, in which the sphenoid and ethmoid cells were filled with opaque media.

A special head rest is used. This consisted of a sheet of bakelite having a triangular opening for the nose and attached upon a frame in such a way that the bakelite sheet could be securely held over a film holder or cassette. The most advantageous positions are inclined planes of 3 and 7 degrees.

Röntgenograms made at an angle of 25 degrees showed the upper border of the sphenoid sinuses to be on level with line formed by the anterior border of the optic groove and the upper roots of the lesser wings of the sphenoid bone. Thus, the anterior ethmoidal cells are just below the frontal sinuses.

In the author's opinion the most suitable landmark is obtained at an angle of 107 degrees. This is a line formed by the optical groove, back in crescent shaped and curves downward on either side toward the optic foramen and anterior knood processes. At this angle the posterior ethmoidal cells lie above, and the anterior cells below the shadow cast by the middle turbinate bone.

In the lateral view the line produced by the greater wing of the sphenoid bone separates the sphenoid sinuses from the posterior ethmoid cells. The anterior and posterior ethmoid cells are fairly accurately divided by line arbitrarily drawn along the shadow cast by the posterior border of the orbital process of the maxilla bone.

A careful study of the thirty six roentgenograms published with the article will repay any one interested in a new technique to show this region.

The practicability of the method has not been proved by a large number of clinical cases, but has a good operation but its usefulness has been demonstrated in a limited number.

C. H. HANCOCK, M.D.

Wahart, D. J. G. Chronic Catarrh of the Nasopharynx. *Laryngoscope* 9 3 XXXIX 307

The author discusses the changes that have occurred in the past forty years opinions regarding the prevalence and importance of chronic catarrh of the nasopharynx. He gives a summary of the work concerning its etiology which are held by Mackenzie in 1884, by Robinson, and by others.

In Robinson's opinion catarrhal diathesis is the determining factor in these cases. Niemeyer held that nasal catarrh is local in its nature and cause. MacKenzie thought that chronic irritation as of dust, was the chief factor.

Washart states, "We have in chronic post nasal catarrh, as originally described, a disease which as distinct entity has disappeared, not through a change in climate or diet, or hygienic surroundings or the absence of dust but because we classify our diseases more correctly and more importantly still, because we appreciate better and are more fully determined to secure a maximum of normal nasal respiration for our patient. Scarring the posterior ends of the inferior turbinate and resecting the septum has done more than aught else to effect this change because with free nasal breathing the mucous branches of the nasopharynx do not swell and secrete as where nasal obstruction exists, and in other cases our improved technique for posterior rhinoiditis and empyema of the sphenoidal sinus has prevented the onset of post nasal catarrh."

As we have learned to recognize that swelling of the lateral walls of the nasopharynx or a granular appearance of the posterior wall of the same region is occasionally due to causes located elsewhere so we must recognize that halting and droppings and a full sensation behind the nose are in like manner due to causes located elsewhere, and refrain from dignifying these as symptoms of disease confined to the nasopharynx. W. B. STAN. M.D.

MOUTH

Ramstedt: C. The Operation for Complicated Harelip (Zur Operation der Complicirten Harnscharte). *Zeitschrift f. Chir.* 9. Abt. 1913.

The separation of the lip and cheek parts from the jaw with or without operative loosening of the intermaxillary bone, may cause erysipelatous infection and lead to deglutition pneumonia. Therefore for the last thirty years Ramstedt has sought to force the projecting intermaxillary bone back by manipulation. He tried this first in case of simple harelip. The child's head being held by an assistant, the intermaxillary bone is grasped between the thumb and index finger, loosened, and forced back by pressure and shaking the lip being protected from pressure by a pledget. This procedure which requires but the most from one to ten minutes, is repeated the next day until after four to six sessions, the projection has become so loose that it can be held back without tension by the nature of the freshened margins of the cleft and no separation of these margins from the alveolar process is necessary.

In 16 cases good results were obtained. The procedure has now been used with success by Ramstedt in 17 cases of double harelip. The nose seemed to be less misshapen than after von Baileys operation. STEINER (Z.)

Luxemburger, A. Plastic Surgery of the Jaw and Hard Palate (Beiträge zur Kiefer- und Gaumenplastik). *Deutsche Zeitschrift f. Chir.* 9. Abt. 1914.

The author reviews briefly the various operations for the repair of defects of the jaw and reports 300 cases of free transplants in three-fourths of which

satisfactory results were obtained. The cause of failure in the remainder was infection by bacteria latent in the scar tissue. The lesions were gunshot wounds. To obtain greater resistance, he embedded the transplant in tissue known to be aseptic and having a rich vascular supply, the sternocleidomastoid muscle. At the end of eight to ten weeks he placed the transplant with the mobilized, attached piece of muscle in the defect in the lower jaw.

The fear that large pieces of bone in muscle may be mechanically burdensome is unfounded even when they extend up over the clavicle. The displaced portion of muscle survived even when more than half was separated. The fairly constant nutrient arteries enter the upper half of this muscle.

Of twenty-eight such transplants, twenty-five healed readily. In two cases consolidation was not obtained because of the smallness of the transplant. One transplant was expelled because the separation from the muscle bed was too extensive. The technique is as follows.

Stage 1. The transplant with attached perosteum is taken from the tibia or the crest of the ilium. Holes are bored in the ends. A longitudinal incision is made in the anterior border of the sternocleidomastoid muscle beginning two fingerbreadths under the angle of the jaw and extending to the clavicle. Next, under surface of the sternocleidomastoid muscle a niche is made with the Kocher probe and into this the transplant is laid. The muscle is then sutured over the transplant with fine catgut.

Stage 2. This part of the operation is performed eight weeks after the first stage. If it were delayed much longer there could be shrinkage of the transplant from absorption. The previous incision is reopened and the muscle is mobilized by separation of the sternal and clavicula parts partly by blunt dissection, partly with the knife, as far as the center or further until the transplant can be brought into the defect without tension. The piece from which the transplant was removed is closed and the skin incision then lengthened in the form of a curve or with an acute angle as far as the defect. The fracture ends are exposed, a periosteal pocket is formed (Lexer) holes are bored and the transplant is freed from adherent muscle fibers where it approaches the ends of the jaw. A strong catgut suture is passed through each of the holes drawn taut and tied and the free ends are pushed into the periosteal pocket. In many cases the ends were held sufficiently firm by the pocket without other fixation. The soft parts are sutured with catgut. A small rubber drain is then placed at a distance from the fracture site.

The disadvantages of this procedure include the complicated wound relations in the second stage, the necessity for narcotics in the second stage and the great care necessary to prevent separation of the transplant from its nutrient pedicle. With regard to the advantages the author states that this indirect autoplasty gives much better prospects of an uncomplicated healing in the danger of infection.

tion is slight, even when the buccal cavity is opened, Lexer's method of preparing the field of operation by excising suspicious scars is unnecessary; the cosmetic result is good; there are no sharp projections, and, if desired, skin may be included in the transplant.

Rather long pieces of bone should be used, and the drill holes must be sufficiently large. The mobilization on the under surface of the sternocleidomastoid muscle must be performed with care on account of the proximity of important vessels. Submaxillary glands and lymph glands may be removed if they are in the way. The nutrient pedicle must not be compressed by fixation sutures. Location of the head toward the side operated on is seldom necessary. The fragments are immobilized by the Schroeder-Baezel method with a sliding splint. If there are few teeth, an interdental splint may be inserted and the jaw bound together.

In most of the author's cases the gunshot wounds were rather large. In nineteen the defect was in the horizontal portion, in 10 in the angle, in 10 in the ascending ramus, and in five in the chin. Union was firm in from one and one half to eight months. When there is latent loci of infection this method offers greater security than free anastomosis. It can be used also on the extremities in the treatment of parathrombosis.

The author's procedure for the repair of large defects of the hard palate renders unnecessary the use of a rubber obturator. The technique is as follows:

First stage. A double skin flap is formed from the lateral cervical region beyond where the hair grows and a piece of skin and platysma muscle 1 cm long and 3 cm wide extending from the region of the angle of the lower jaw to the clavicle. The base of this flap is above and somewhat broader than the pex. Under the clavicle a second piece of skin, 14 cm by 5 cm, is taken. The connecting bridge of this flap also is above. The lower flap is pushed up under the upper one and the wound surfaces are sutured together. The flap thus formed now hangs from the neck and rests on the shoulder like an epaulet. The wounds left by the removal of the flaps can be easily drawn together.

Second stage. In the course of eight days the lower connection is gradually divided and embedded in a horizontal incision made near the angle of the mouth.

Third stage. The angle of the mouth is slit or the cheek is opened close under the attachment of the flap and the flap is turned in and sutured about half its circumference to the freshened opposite side of the palatal foramen.

Fourth stage. The connecting bridge in the mouth is excised as far as the outer side of the cheek and the transplant is stitched to the part of the palatal defect which lies opposite the cheek incision.

General anesthesia is necessary in only the first stage. The others require only local anesthesia. If the defect is very large, it is best to slit the angle of the mouth as otherwise exact suturing is difficult.

If the slit is made in the vestibular oris between the lower jaw and the cheek (von Ennsberg, 1911, Kappeler) there is danger of injuring the facial nerve and causing disadventitious tension on the flap. The tension is lessened by preliminary incision near the angle of the mouth. To fix the palatal defect broad adhesion surfaces are made with knives having curved blades. Sutures are done with thin copper wire and silkworm gut with Hegar needle holder.

The period between the first and second stages is sixteen days, and that between the second and third from three to four weeks. During this time the flap is kept slightly compressed between two cardboard splints to prevent rolling up. Before the third stage a rubber prosthesis is worn to prevent the teeth from meeting. At the fourth stage wide excision of the pedicle of the flap is done to give sufficient depth to the conjunctival fold. A bone plate taken from the pelvis or the scapula and shaped like the palate may be placed in the double fold and allowed to heal in.

The author cured six cases by this method, five cases of an injury and one of toxic defect which had been operated on a number of times. Almost all speech is good in spite of the absence of an arch, and the patients are able to eat even hard food in case. Fluids do not escape into the nasal cavity or the atrium of the larynx.

Zurich (2)

Koettner H. Carcinoma of the Tongue (Der Zungenkrebs). *Therap. u. Gynae.* 1912, nos. 444

Cancer of the tongue occurs much more often in men than in women. In 100 primary cancers the relation is 81:9. As main causes are to be considered tobacco and syphilis and the combination of both. Leucoplakia precedes the condition in 10 per cent of the cases. Sharp-pointed teeth and ill-fitting plates lead to oral hygiene and the consumption of poor liquors are also etiological factors.

Tongue cancer manifests itself only rarely before the forty-fifth year. Histologically it is almost always pavement-epithelium cancer. Cylinder epithelium cancers are extremely rare. As a rule it attacks both edges and the base of the tongue. Surface carcinomas springing from the pavement epithelium of the mucous membrane and ulcerating early spreading superficially and downward. It has like raised edges are more numerous than deep tumors originating in the glands of the mucous membrane and without plain demarcation.

Tongue carcinoma grows through the tongue by continuity, attacks the floor of the mouth, the jaw and the pharynx, and finally converts the mouth cavity into a fetid mass.

The early lymphatic metastases are due to the numerous lymph vessels in the tongue, the great number of lymphatic glands, and the muscular lymph massage the cancer particles into the lymph channels. Of importance is the fact that the lymph of either half of the tongue drains into the glands of both sides. Often in unilateral carcinoma metastases are

found in the lymphatic glands on both sides. The occurrence of metastases in the inner organs is less frequent.

Among the early symptoms is violent pain. Later hemorrhage is seldom absent. The early diagnosis of this destructive disease is very important. In every case of suspicious nodule or ulceration on the tongue a test excision must decide. In the differential diagnosis ulcers caused by rough teeth must be borne in mind. Of the greatest importance is the decision as to when a leukoplakia degenerates into cancer.

In the differentiation of cancer from the sequelae of syphilis it is to be remembered that gummatous foci are usually multiple while carcinomas are single, and that cancer usually develops on the edges of the tongue and in the pre-epiglottic region. While gumma to occur most frequently in the middle and on the tip of the tongue. Hemorrhages and pain are rare in cases of gumma. Swelling of the glands suggests cancer. The tough layered bottom of a gumma is easily removed without causing bleeding, while cancer is necrotic and soft and bleeds easily when removed.

The differentiation of cancer from tuberculosis, the very rare chondromyxoma, and sarcoma is usually easy.

The prognosis without operation is very poor. Operation has good results if the diagnosis is made early and even in advanced cases permanent cures have been obtained by thorough operation. The operation is always performed under local anesthesia. It consists of two parts, the thorough removal of the cervical glands and the extirpation of the tumor. In early cases one stage operation is possible but in others two stage procedure is necessary. The lymphatic glands of the region of the tongue are removed from a cross incision. The

submental, submandibular, and deep cervical glands on both sides are removed. The lingual artery on both sides must be ligated or in advanced cases, the external carotid on one or both sides between the lingual and superior thyroid. When the tumor is favorably located it may be excised by cutting the cheek after the method of Jaeger. When the tumor occupies the base of the tongue and when the condition is advanced the lower maxilla must be sawed through. If the floor of the mouth is also affected the median sawcut of the maxilla after Sedillot-Kocher should be considered. For tumors extending far to the rear lateral sawing of the maxilla by Langenbeck's method as modified by von Bergmann is indicated. Since primary communication between the large throat wound and the oral cavity must be prevented by all means, this part of the operation, though saw cut through the maxilla should be performed at second stage a few days later. The patient may be allowed to get up the day after the operation.

The mortality has been considerably lowered through the use of local anesthesia. In the author's case it is 8.3 per cent. HARTMAN (72)

THROAT

Borden, C. R. G. A Clinical and Pathologic Study of Tonsils Subjected to the X Ray. *Boston M & S J.* 1913, clivium, 493.
Williams, F. H. Prompt Action of Radium Radiations in the Treatment of Small or Large Infected Tonsils and Lingual Tonsils. *Boston M & S J.* 1913, clivium, 497.

Borden made a study of the clinical and pathologic effect of the X ray treatment of diseased tonsils with the co-operation of Butler the roentgenologist. The technique of Williams was followed. Sixteen cases were radiated, and from all but two of these Borden resected the tonsils. With regard to the findings the following statements are made:

During the times the radiations were being given, many of the tonsils seemed to be smaller and more normal in appearance, but when subsequently removed by dissection, no real change in size appeared to have taken place.

After radiation many of the tonsils appeared to be normal in size and color but at the time of operation a number of them were found to be filled with pus or cheesy debris.

As method of reducing bleeding and assisting dissection at the time of operation, radiation is useful.

By diminishing over-secretion from the mucous surfaces of the throat, it decidedly decreased the possibility of postoperative pneumonia or lung abscess following throat operations.

In cases wherein diseased tonsils may be justly suspected of producing secondary infections of the joints, heart, kidney or other important organs X ray radiations are inadequate.

In contradistinction to this unfavorable report Williams states that radium radiations produce prompt improvement in the general condition usually in one or two days. Some cases respond after four treatments given at intervals of about two weeks. Williams found also that lingual tonsils, adenoids, and lymphoid tissue on the pharynx respond to radium emanations. O. M. ROTH, M.D.

Rehn, E. The Treatment of Ludwig's Phlegmon by Excision of the Submandibular Gland. (Die Behandlung der Ludwig'schen Phlegmon durch Exstirpation der Glandula submandibularis). *Alta Reichsarchiv* 9, 1, 35.

For the treatment of the deep submandibular or Ludwig's phlegmon, Rehn advocates wide opening of the focus of infection by an incision from the outside. In three cases which ended fatally he found that in following the method of Jordan and Volckner he did not do enough. In that method an incision is made one fingerbreadth below and parallel with the maxilla, and after division of the skin and the platysma muscle blunt instruments are used in proceeding downward to the infiltrated masses on account of the proximity of numerous vessels, and the fibers of the mylohyoid muscle are severed with care.

Rehn believes that in all cases the posterior capsular space of the submaxillary gland, the floor of which is formed by the hyoidomuscle, should be exposed as in ligating the lingual artery and this gland should be removed. In the adherent lymph glands. In case of very severe infection the procedure gave quick and complete cure. Rehn recommends it a meeting more fully the tonical and pathologico-anatomical conditions than the method heretofore employed. *Strom (7)*

K. Trist O. T. Pharyngeal Tumors (Zwei Nasenrachens tumoren). *Chirp. Wk. Zeit.* 1913, 10, 550

These tumors occur only in the time of puberty. They have the character of embryonic tissue and are usually mixed tumors such as gonoblastoma, myxodermatoma. Spontaneous in origin of this kind of typical fibroma has been observed, this being due, perhaps, to obliteration of the greatly enlarged cisterns, and possibly also of the arteries, by the formation of hyaline thrombi. Such lead to necrosis of the tumor tissue. *Kron (7)*

NECK

Merz, G. Struwer and S. Ill. G. in the Neck of Children. *Brit. M. J.* 9, 3, 6

The author has never seen actinomycosis of the neck in children. Syphilitic glands are fairly common and will disappear under a syphilitic treatment. Median cysts in the neck of the child are caused by persistent thyroglossal duct. Tuberculous glands or sinuses are not found in the midline. The median sinuses are never congenital. In dissecting out these ducts, preliminary injection with methylene blue is of great assistance.

Branchial cysts and fistulae are more common on the left side. The author has never seen a complete fistula. A branchial cyst is more serious. A cyst is mentioned in which the cyst delineated itself intact after simple incision. There was no pedicle.

Cystic promata or subcutaneous branchial cysts may be mistaken for cysts when in the sublingual region, but are much more serious and difficult to cure. They may become very large and cause death through pressure. In one case death resulted from obstruction of the trachea. As these cysts tend to disappear spontaneously, operation should be put off as long as possible.

Glandular fever with large swollen glands in clear up under expectant treatment.

Primary malignant growth in child's neck has never been seen by the author. Secondary glandular involvement from sarcoma of the choroid spreading by way of the parotid is not uncommon.

A large and cystic thyroid is more common in girls than in boys. Attention is made of the case in which rupture of thyroid blood vessel caused sudden enlargement with dyspnea from pressure on the trachea.

Adenitis is the most frequent cause of neck swellings in children, but is not so common as it

thirty seven years ago. In 80 per cent of the cases of tuberculous glands there is an inherited tendency.

Glands may be classified into (1) those draining skin areas, and (2) those draining mucous membranes. The latter are those which become tuberculous, but the former become enlarged from pyogenic infection. The posterior auricular gland in a little girl became tuberculous from a scratch with comb. This child had spent most of her time in room with her brother, who died of tuberculous of the lungs and intestines.

Tuberculous gland is more common on the right side. The submaxillary is the gland most commonly affected. Retropharyngeal and lateral pharyngeal abscess must not be overlooked. Loose teeth and infection about the teeth are a very fertile source of tuberculous infection. Of 3,000 children examined for swellings of the neck by Halk, 78 per cent had poor teeth. Cook found that in most cases scrapings from the teeth or the pulp contained tubercle bacilli.

Glands are often infected with tubercle bacilli from the tonsils and adenoids, which in turn often if not always derive their infection from the teeth. It is useless to remove them unless the infected teeth are also removed.

Children with tuberculous diathesis should be given the best of hygienic care, kept away from cases of phthisis and watched carefully after infectious diseases, especially measles and whooping cough. Local treatment of the gums and teeth and tonsils should be given and such tonics as are advisable. The local application of iodine is recommended. Glands which remain enlarged or show signs of softening should be removed.

MARCELLI HOSBY M.D.

Marque, A. Fifteen Cases of Thyrotoxicosis in Nursing. (1) A methionine test in diagnosis of pregnancy and parathyroid. (2) A French-English. *de l'air.* 9, 1, 27

The first symptom of hyperthyroidism is dyspnea, which is relieved by the sitting posture and increased by the recumbent position. Operation is indicated by attacks of suffocation. With chloroform anesthesia, Marque does an extracapsular thyroidectomy by the technique of Adams and Oliver. This operation is very simple and as soon as it is finished the child can be taken home. The suffocation is immediately and permanently relieved.

W. A. B.

Jackson, A. B. and Jackson, R. H. The Relation of the Basal Metabolic Rate to Diseases of the Thyroid Gland. *Am. J. Surg.* 9, 3, 1001, 86

The basal metabolic unit is the most suitable diagnostic and which has come into use since the advent of the X-ray. The varying results reported in the many different types of apparatus have served to discredit this means of diagnosis, but in the hands of the authors the gasometer method of Tissot has proved most satisfactory and accurate.

In the clinical interpretation of results a 0 per cent is considered normal, and little significance is attached to a rate of + 5 per cent. Although the rate may run as high as 24 per cent, it is rare for the reading to reach more than + 100 per cent. The opposite condition is found in myxedema, in which the basal metabolic rate may drop to - 40 per cent or less.

In its relation to diseases of the thyroid gland the metabolic unit is valuable for its negative as well as well as its positive findings. The cases of young neurotic girls with a rapid heart, palpitation and tremor, who present symmetrical enlargement of the thyroid, with thrills and bruits, are often difficult to diagnose. The establishment of a normal rate in these cases at once eliminates the necessity for surgical interference.

In considering the patient's ability to withstand the shock of operation, the basal metabolic rate should be considered merely as one of several factors, including history, impending crisis, the condition of the heart, the loss in strength and weight, etc.

Why some patients with exophthalmic goiter are able to carry a rate over + 100 per cent with greater ease than others are able to carry a rate of + 60 per cent is not understood. Exophthalmic goiter progresses by a series of crises. If the patient lives through the second year with two or more crises, permanent myocardial and renal degeneration may result. The aorta does not operate while the curve of hyperthyroidism is rising rapidly, or when the patient is on the verge of a crisis. A lower reading may be observed in a patient approaching a crisis than in one who has recently passed through a crisis but the operative risk in the latter case would be less. Rapid loss of weight, vomiting, diarrhoea, and anorexia warn of a crisis and should be given more consideration than a low basal metabolic rate.

The authors use the quadriceps test, in which the patient mounts a step without holding onto a support, to distinguish patients with true hyperthyroidism from those without it. The former latter and seek support mounting the step and in advanced cases are entirely unable to mount it.

In early exophthalmic goiter operation may be performed with fair risk when there is only moderate loss of weight and strength with a metabolic rate below + 50 per cent, regular pulse not over 140, and slight or no dilatation of the heart.

In adenoma with hyperthyroidism symptoms of hyperthyroidism usually do not develop until from fifteen to twenty years after the appearance of the adenoma and persist for about three and one half years before a surgeon is consulted. In these cases cardiac and renal damage are more serious than in exophthalmic goiter and the surgeon is more concerned with the ability of the heart and kidneys to functionate than with the possibility of postoperative hyperthyroidism. In this type of goiter the average metabolic rate is + 35 per cent, whereas in exophthalmic goiter the average is over + 50 per cent.

Thyroidectomy cures hyperthyroidism almost immediately.

In severe cases of exophthalmic goiter the patients are subjected to rest in bed and two ligations at an interval of a week or more. Within ten days the rate usually drops to + 50 per cent. Two weeks after thyroidectomy the rate drops to + 0 per cent but in only about one-third of the cases does it return to normal in this time. Within another two weeks the majority of rates drop to normal.

Holtz, G. Endemic Goiter and Cretinism, and Their Prophylaxis (Ueber endemische Struma, Kretinismus und ihre Prophylaxe) *Klin. Wchnschr.* 9 Jan, 1913.

The prevention of goiter by the administration of small doses of iodine, which is now being so much discussed, was tried some time ago but was abandoned because it was not known how to avoid the dangers of the treatment. Our present efforts in this direction rest wholly on our experience with regard to the effects of iodine rather than on better understanding of the nature of goiter. However, Hunter's hypothesis attributing goiter chiefly to a deficiency of iodine in the food deserves consideration.

The author discusses the relationship between goiter and cretinism in detail. It is most commonly believed that the functional basis of cretinism is a hypothyroidism. The anatomical findings in the gland in adult cretins apparently support this view as they show atrophic, degenerated tissue in one lobe or another. In the author's opinion, this anatomical picture is a secondary phenomenon without significance with regard to the changes characteristic of cretinism and the frequent occurrence especially in young cretins, of large goiters presenting the histologic picture of stimulation-goiter with increased secretion justifies the conclusion that the increased secretion stands in causal relationship to the cretinism. Proof of this he sees in the splendid results of strumectomy on young cretins.

In the solving of these difficult problems the patient's age and the relationship between the thyroid gland and other endocrine glands must be borne in mind. Cretinism in the absence of goiter the author ascribes to the increased secretion of goiter in the parents, which is always to be found in such cases. Resection or destruction of the thyroid gland, and the administration of iodine are similar in effect. Why this is so has not yet been explained.

From the experiments in the administration of iodine as a prevent of goiter begun three years ago, great improvement in the public health may be expected.

GERLACH (Z)

Troell, A. The Structure of Goiter with Particular Reference to Basedow's Disease (Ueber den Bau der Struma, mit besonderer Berücksichtigung des Morbus Basedow.) *Festschr. Schw. Länd. Seelisch. Samml.* 912, 25, 22, 5.

This article is based on a study of sixty cases of operation for goiter, the case histories and microscopic findings of which are reported in detail.

The microscopic findings are shown in sixty-three unusually fine photomicrographs. It is determined that in 50 per cent of the cases there was undoubtedly an abnormality in the follicles and in the epithelium of the follicle (adenoma and carcinoma); the follicle cubical (cylindrical epithelium). These changes are similar to those in compensatory hypertrophy after removal of the greater portion of the thyroid gland and in spontaneous activity of the thyroid gland.

The secretion, which in half the cases can be traced to the epithelial cells particularly in the pronounced cases of Bredon disease, is different in staining qualities from the normal secretion. While the latter stains red (azocarmine Mallory), the contents of the follicle in the altered condition stain blue (microchemical transformation). Small cell infiltration was found in 50 per cent of the cases of the diffuse toxic form of goiter but it could not be determined whether this is an expression of intoxication or of infection.

The pathologic changes present in such a large percentage of toxic goiter is that they may be regarded as characteristic of Bredon disease. In some cases however only one of the findings mentioned is noted. (Post.)

Kessel, L., Lieb, G. G., Hyman, H. T., Lande, H. Studies of Esophthalmic Goiter and the Involuntary Nervous System. A Study of Fifty Consecutive Cases of Esophthalmic Goiter. *Arch Int Med* 93: 433-435.

The authors give a detailed account of the course of fifty cases of fully developed esophthalmic goiter in which no specific treatment was instituted. The course of the symptoms and basal metabolism was closely followed and the results judged on the basis of restoration to social and economic usefulness and the return of the metabolism to within normal limits.

Forty-one of these patients have been socially and economically restored. Of these twenty-seven are restored within six months, and four or thirty-one all told, within six months of their hospital entry. In the large majority of cases economic restoration may be anticipated within six months and in the majority within four months. The authors emphasize that they refer to economic recovery. Symptomatic recovery is not complete. Palpitation and tachycardia on exertion and certain degree of thyroid enlargement and esophthalmos do not completely and permanently disappear in any case. The patients are not cured but their disease is in a stage of arrest.

The restoration of forty-four of fifty patients to economic recovery in such a short time is sufficient to emphasize pointedly the tendency of this disease to spontaneous arrest in the vast majority of instances. (Larson L. Satterlee, M.D.)

Urban, L. Twenty Two Years of Goiter Surgery. (*Umschau für Kehlkopfkrankheiten*) *Zentralbl Chir* 9: 1-60.

The author reports his experience in the treatment of 500 cases of goiter during a period of twenty years. In every case morphia was given and the operation was performed under local anesthesia produced with 5 per cent novocaine. In cases of large goiters from 75 to 100 gm of novocaine was used. Kocher's collar incision was made. In 100 cases of subaternal goiter the author succeeded in removing the goiter without resecting the sternum. In one case of calcified struma, however, such resection was necessary. He also performed sub-lateral capsular resection, leaving behind, however, the size of pleura to protect the recurrent laryngeal nerve and the parathyroids. The trachea was suspended by suturing the stump to the sternocleid and thyrohyoid muscles, and a rubber drain was inserted for thirty-four hours.

In cases of esophthalmic goiter a unilateral resection as done with ligation of the superior thyroid artery on the other side close to its entrance into the gland. In the cases resection of the thyroid as done in addition. Silk used for the sutures. In cases of very extensive resection (four fifths) and then hypothyroidism as suspected, thyroid tissue from a young person was implanted under the breast and thyroid tablets were given. Myxedema never occurred.

To avoid the parathyroid artery the thyroid artery was never ligated on the trunk, but always in the plane of the incision. In none of the cases in which this method was used and a vegetable diet as given for the first eight days were there any signs of tetany. In 4 per cent there were laryngeal symptoms. In 1 per cent there was double paralysis of the recurrent laryngeal nerve and in 4 per cent of edema and hemorrhages. In about 5 per cent of the cases there was hoarseness. Essential postoperative paralysis may disappear entirely. After the operation the temperature often reached 38 degrees C. There were 13 deaths, mortality of 2.6 per cent. Eight per cent of the patients were cured. A recurrence developed in 1 per cent. In cases of struma maligna, despite of radical procedures the results were poor. (Vossmeritz.)

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

Steiger, M. Can True Epilepsy Be Cured or Benefited by Roentgen Treatment? (Kann die genuine Epilepsie durch Röntgenbestrahlung einer Heilung bzw. einer Besserung entgegengeführt werden?) *Schweiz. med. Wochenschr.* 9, 14.

The author treated fifteen cases of true epilepsy by total irradiation of the brain. In some of them striking improvement as regards the frequency and the severity of the attacks was noted. However the number of cases is too small and the duration of the treatment too short to warrant a final opinion.

WUNDER (Z)

Drevermann, P. The Repair of Defects in the Dura and Skull; with Particular Attention to the Permanent Results in the Prevention and Cure of Traumatic Epilepsy by Repair of the Dura by Free Transplant from Fatty Tissue (Ueber den Ersatz von Dura und Schädeldesfekten, unter besonderer Berücksichtigung der Dauererfolge in der Verhütung und Heilung der traumatischen Epilepsie durch Duraersatz mit freier transplantierter Fettgewebe) *Beitr. kl. Chir.* 9, 335-374.

There is an element of uncertainty in every method of treating epilepsy because the pathological-anatomical conditions determining the disease are as yet unexplained. On the one hand we are urged to open the skull in the manner of val and on the other to correct defects by plastic procedures.

Observations over long period of time are necessary to determine whether or not plastic repair of a defect in the skull contributes to the cure of epilepsy. The author therefore reports cases which have been under observation for from three to ten years after operation. The repair of skull defect is necessary because epileptic attacks may be induced by variations in pressure in the open skull. Tension on rigid scar has similar effect. Spontaneous bony filling out of skull defects is very rare.

For covering bone defect free bone transplantations as used almost exclusively in Lexer's clinic. Larger defects were repaired with bone taken from the tibia, and the others by plates of bone with pericosteum attached taken from the external table or the vicinity of the defect. Subsequent roentgen examinations revealed that in the case of defects covered with bone from the external table the loss of bone by absorption was frequently greater than the new bone formation. Years afterward demonstrable defects remained between the pieces of external table. Here bone union had not taken place.

The author emphasizes that the transplantation should not be undertaken until hemorrhage has

been completely arrested. The transplant should be as thick as possible and should fit into the defect exactly. If sufficient pericosteum has remained over the defect, the transplant should be placed with its pericosteal side next to the brain so that it will be covered by pericosteum on both sides. If the pericosteum over the skull defect has been lost the transplant should be placed with the bony wound surface next to the brain. In order to obtain the desired curvature it is often necessary to saw the transplant across in a number of places cutting through as far as the pericosteum.

The scar in the brain is usually excised as completely as possible, but when the scar is very deep the scarred dura is merely separated from the lamina vitrea. The defect in the dura must be filled out in such manner that cicatricial adhesions between the surface of the brain and the dural transplant will not form again, and the closure of the defect must be sufficiently resistant to withstand the intra-cerebral pressure.

Freely transplanted fat is employed as the most suitable material for repairing defects in the dura. The inclusion of fascia in the transplant does not appear to be essential. At operation the bony defect is usually enlarged to an extent which exposes the margins of the dural defect for about 0.5 cm. the scarred dura then being separated from the margins of the bony defect. The thickness of the flap of fatty tissue to be transplanted is reckoned from the size of the defect caused by the sinking in of the brain. Recently the plastic operation has been carried out in two stages in all cases.

The repair of the dura is best done six months after the wound has healed. It must not be delayed until the picture of changes in the brain causing epilepsy has become established. Foreign bodies found in the scar must first be removed, the plastic operation being postponed. The second stage, the repair of the bony defect, should be performed three months after the repair of the dura.

Subsequent examinations of cases showed that the prospect of cure or improvement is not particularly good if epilepsy is already present, there were only five cures in thirteen such cases. On the other hand, there is a good prospect of preventing the development of traumatic epilepsy by plastic repair of the skull undertaken at the proper time.

SCHULTZ (Z)

Rivarola, R. A. Hydatid Cyst of the Brain in Children (Los quistes hidatídicos del cerebro en los niños) *Sem. med.* 9, 333-37.

In the Children's Hospital at Buenos Aires, Rivarola has observed twenty-two cases of hydatid cysts with the following localizations: frontal, 3; fronto-

parietal, 1 temporo-parietal 3 occipito-parietal, 3 occipital, 4 parietal, 8.

In the diagnosis, roentgenography of the cranial vault, examinations of cerebrospinal fluid and blood, and laboratory reactions are of no value. The Polak-Velasco trephine puncture and pneumo-encephalography are not practiced in the Children's Hospital; other methods have all ways sufficed for an exact diagnosis.

In the absence of any known specific treatment of hydatid cysts surgical operation has been adopted as the only efficacious method in these cases. The operation is performed as early as possible. In the evacuation of the cysts great care is taken to prevent contamination of the surrounding tissues.

Of the twenty-four cases reviewed twenty-one were operated upon. Eight (38.00 per cent) patients recovered definitely and thirteen (61.99 per cent) died. Of the latter six died of recurrence from five months to one and one-half years after the operation. Only in one of these cases was the cyst suppurative. W. A. BERN.

Forster, O. Localized Symptoms from Lesion of the Left Parietal Lobe. Observations in Case of Brain Tumor Treated by Palliative Decompression. (Ueber die Herdenbeschwerden bei Lesion des linken anteren Gehirnhalbkugels. Erfahrungen an einem lokalisierten Hirntumor.) *Med. Klin.* 9: 3, 117.

For three months, the patient, a woman of 3 years, had had severe headache associated with progressive loss of vision leading to almost total blindness. As she fell forward, her eyes were closed and as there was pain in the left ear, tumor of the left subangular region was suspected and decompression over the posterior part of the left parietal bone was performed. As soon as the dura was opened the brain protruded.

Following the operation there was rapid improvement of vision but on account of the progress of the syndrome of destruction of the center in the left gyrus angularis of the right hemispheric lobe, the lamellar puncture did not influence this syndrome which was caused perhaps by hemorrhage during the operation, but the symptoms decreased when the protrusion ruptured and discharged cerebrospinal fluid in considerable quantity.

From critical analysis of the symptoms the author comes to the conclusion that the specific action of the gyrus angularis is the transformation of external movements and directions of motion into internal muscular movement and directions, thus explaining among other things, the rhythm of motion in writing. STAUB, C.

Rosenbluth, B. A Case of Tumor of the Cerebellum That Gave Very Interesting Results to Tests of the Labyrinth and Labyrinthine Tract. *Laryngoscope* 9: 3, 117.

Rosenbluth reports the case of a 30-year-old boy suffering from severe headache, vomiting and un-

steady gait. When standing, he had tendency to fall back and nod to the right. The left eye showed internal strabismus. Later the patient became drowsy and there was severe pain with slight tenderness in the right frontal and parietal regions. It made loud and frequent noises. The pain became slow and omitting occurred.

The pupils were normal. There was no strabismus. The eye grounds were normal. The reflexes were normal with the exception of slightly increased knee jerk on the left side. The laboratory studies and roentgenograms of the skull were negative. The white blood cell numbered 11,400. The cerebrospinal fluid was clear but heavy with albumen. A healed perforation of the membrane tympani on each side was found. Turning tests and caloric tests showed reacting labyrinthitis and labyrinthine tract. The hearing was good in both ears.

The condition was diagnosed as a neoplasm situated in the upper worm of the cerebellum and invading the superior medullary horn.

Postmortem examination of the brain confirmed the clinical diagnosis. Pathologists reported the neoplasm to be a large spindle cell sarcoma. W. B. STARR, M.D.

Bleidi, A. The Physiology and Pathology of the Pituitary Body (Pituitary and Pathology of the Hypophysis). Manab Bergmann, 9.

At the 14th, fourth Congress for Internal Medicine in Wiesbaden on April 16, 1909, a very complete review of the present status of the anatomy and the normal and pathological physiology of the pituitary body was given. The most important points brought out in this work are as follows:

Anatomically the pituitary body consists of four parts: (1) the anterior lobe (pars distalis, prehypophysis); (2) the pars intermedia (pars nervosa, neuralis); (3) the pars infundibularis (neurohypophysis) and (4) the pars tuberalis. The last two are the eminentia saccularis of the tuber cinereum. Part 1 and 2 are developed from the ectoderm of the embryonic buccal cavity and the prehypophysis is derived from the outgrowth of the foregut.

Bleidi regards the chief cells in the anterior lobe as mother cells of the cosmophile as in the hypophyseal cells, but believes that three types of differentiated cell forms with particular functions. The lipid secretion of the chief cells as all the granules is given off into the blood vessels and only exceptionally stored up in the follicles. The mother cells form colloid secretion which is first given off into the acid of the follicles and from there is poured into the cleft of the tissue of the mother cells and then into the left in the obstructive and supports tissue of the neurohypophysis and the infundibular stalk.

The secretion of the anterior lobe (hypophyseal substance) isolated as pituitary gland, physiologically affects the known effect of pituitary gland upon the blood pressure, respiration, growth, muscle and concentration of the

due to one or more intermediate substances which probably undergo definite changes (eluvation) on their way through the neurohypophysis.

Regarding the functions of the pituitary body as shown by clinical and experimental observation Biedl makes the following statements:

1. The pituitary apparatus is a system of organs important to life. The separate parts perform different functions in the economy of the body, and the co-operation of all of them is necessary for the maintenance of life.

2. The anterior lobe is the true gland of growth; the internal secretion of which determines the growth and thereby the dimensions and habits of the body partly directly, partly through influence upon the generative glands. Undersecretion leads to dwarfism and premature senility and oversecretion to giant growth and cronegaly.

3. The middle lobe is a metabolic gland, the internal secretion of which influences general metabolism, the individual components of metabolism, the regulation of body heat, and the activity of the sympathetic system. Probably this secretion has an indirect influence on the metabolic center situated in the subhypophyseal region by way of the neurohypophysis and the hypophyseal pedicle.

4. The pars intermedia may function with the pars intermedia, but this has not been proved.

5. The posterior lobe is not secreting. Rickets, dystrophia diaphanogenita can arise from injury to the middle lobe of the pituitary body or to the midbrain. In most cases an injury is both is found. The same is true of diabetes insipidus. The regulating central organ of the hypothalamus functions independently and its activity is determined by nerve and blood stimuli. Important blood stimuli are the hormones of the neighboring pituitary body with which it is connected by lymph passages.

6. It is not known whether there is a significant connection in the close proximity of the gland of growth and the gland of metabolism.

7. There is reciprocal action between both glands of the pituitary body and other endocrine glands.

N. ROZANOFF (Z)

SPINAL CORD AND ITS COVERINGS

Kallitzer and St. J. Trou. The Roentgen Findings in Tumors of the Spinal Cord (Roentgenbefunde bei Tumoren des Rückenmarkes). *Wochenschrift für Kinderheilkunde und Gynäkologie*, 1924, 10, 395.

The authors discuss only tumors which arise from the spinal cord or its membranes and do not attack the bone. Of these tumors were examined 17 of them were extramedullary and 11 were intramedullary. Exostoses were present in nine of the ten cases of extramedullary tumors but in only one of the five cases of intramedullary growths. The latter as a large tumor that had grown through the entire cervical marrow. The exostoses were found 6 times at the level of the tumor and four times somewhat further down.

In cases of centrally located tumors they were always at the tumor level, but those of dorsal or more dorso-lateral tumors they were sometimes somewhat lower. In four cases of intramedullary tumors and in cases of open meningitis serosa no exostoses could be found. Therefore the finding of an exostosis which is confined to a small part of the spinal column may be of diagnostic significance indicating tumor of the spinal marrow. Laminectomy should be performed at the level of the exostosis unless the neurologist is sure of the location of the tumor. If the tumor is not found at the level of the exostosis a search should be made for it further up.

In conclusion the authors state that little is known regarding the cause of the exostoses. In this connection they cite the fact that Schlessinger and Schüller have found circumscript exostoses in the neighborhood of endocranial brain tumors.

H. W. (Z)

PERIPHERAL NERVES

Strodyn P. J. The Treatment of Injuries of the Peripheral Nerves (Behandlung der Verletzungen peripherer Nerven). *Verhandl. d. Russ. Chir. Kongresses*, Petrograd, 1924.

To determine the relative merits of surgical and conservative methods the author has chosen from his 87 cases (3 of which were operated upon) only those in which the treatment was carried out systematically for a period of at least three months. Purely conservative procedures in 56 cases resulted in improvement in 45 per cent, while operative intervention in 31 cases caused improvement in 63 per cent with restoration of active motion in 27.5 per cent. The inadequate period of observation (for valid opinion a period of 10 or three years is desirable) was reflected more clearly in the statistics of single operative procedures. Neurolysis was successful in 76 per cent of fifty-five cases, and neurotomy was successful in 4 per cent of thirty-five cases. Favorable results followed six plastic nerve operations only to the extent that in two cases trophic ulcers healed.

From the world literature of war injuries the author cites the results in 338 cases. Success followed neurolysis in 69.5 per cent and suture of the nerves in 54 per cent.

Physical and mechanical therapeutics must precede and follow operation. The results of operative intervention undertaken from three to four months after the injury have been no worse than those of operations performed in the first few weeks.

Lenthe operation has proved to be valuable clinically. Median neuritis is not to be feared for according to the observations of de la P. Troff with vital stains in the laboratory of Anitschkoff the division of the median nerve occurs from the tumor. If the blood vessels cut and

V. DER OTTER, SICKLE (Z)

Chernik, W. H. *The Operative Technique in Injuries of Peripheral Nerves* (Zur operativen Technik bei Verletzungen peripherer Nerven). *Vierteljahrsschrift* 92 11

The author reports upon thirty-four cases in which an operation was performed for laceration of the peripheral nerves. In sixteen, the sciatic nerve was involved, in five the median nerve, in three the ulnar nerve, in six the radial nerve, and in two the brachial plexus. The sciatic nerve was exposed by the Boroatich-Wengrowski incision.

Stoffel contention that the nerve tract of the radial muscles are distinctly isolated from one another in the nerve is not entirely correct. The investigations of Borchardt and Wajsmanski demonstrated that there are numerous anastomoses between the peripheral nerve therefore consult using plexus. In obtaining accurate coaptation of the nerve ends is important. The nerve end may be made the same width by Hofmeister method of injecting fluid into the smaller end. The reinforcement of the suture with a tube and strip of fascia should be abandoned. The suture itself should be made in the simplest manner. The placing of the suture line between muscles is an advantage. The neurolysis and the endoneurolysis must be carried out with great care. *Sci. Am.* (4)

Nassarow, W. M. *Regeneration of Nerves in Clinical Tissues* (Ueber Regeneration des Fadenknostrichs in Narbengewebe). *Verhandl. d. Allg. Kongr. Anat. Leipzig* 1923 1 11

Human scars are ununited after from twelve days to one year. Staining is done by the Ehrlich-Dopiel and Golgi methods.

In the twelve-day scar regeneration processes were noted, but as the small nerve trunks had not yet penetrated into the epithelium no pain was caused by pin pricks. In addition to regenerative processes degeneration as observed in the scar boundary the nerve endings did not take the stain.

In the six-week scars the nerve terminations had grown into the epithelium and sensation as present in the scar.

In scars of six months old growth buds were still found in the epithelium but after six months these were absent.

In scars four months old with an unhealed granulating wound (amputation stump) the process of scar innervation could be seen plainly. The nerve fibers which form the trunks being clearly visible in the newly formed connective tissue. From these trunks fibers branched off which formed subepithelial plexus sending out terminal branches which formed non-encapsulated nerve endings.

In one-year-old scars of the tip of the finger peculiar nerve endings were observed which in shape resembled the Golgi-Mazzoni corpora.

The author comes to the conclusion that the regeneration of nerves is subject to special laws, and that the final objective of the nerve fibers is the epithelium. The growth of the nerve fibers is in

dependent of the direction of the fibers of the connective tissue and the vessels.

The wound is epithelialized first and penetrated by the nerve fibers later. Consequently full regeneration with restitution of the nerve elements does not take place in man before one or two months or longer. The depth and extent of the wound to be scarred over are factors of influence. *Schweizer Z.*

Rosenthal, M. A. *The Etiology of Neurofibromatosis* (Zur Ätiologie der Neurofibromatose). *Archiv f. Klin. Med.* 1923 1 45

The author gives a detailed description of the clinical picture and the histologic findings in the case of a 20-year-old woman with neurofibromatosis of the trunk, the flexor surfaces of the extremities, and the palms of the hand. The lesions included telangiectatic spots, freckles, simple warts, ulcers, neurofibroma, and fibromatous mollusca and cavernoma of the most varied dimensions up to the flap-shaped structures first described by Broca as elephantiasis neurofibromatosa. The latter larger than papillae covered the right arm, the original site of the disease where a pigmented spot was present when the patient was born. When she was 1 year of age the spot began to grow like a tumor. At the age of 9 years when there was cessation of menstruation, the distribution was general.

The patient was essentially dull. There was no pain. The uterus was infantile. The thyroid gland was enlarged. The albumin content of the serum was markedly diminished but that of the blood was normal. The leucocytes were increased and showed 70 per cent mononuclears. In the distal third of the right humerus there was pronounced bone atrophy (neurorotrophic) in the proximal part and in the forearm it was just beginning.

As the result of organotherapy the general condition improved, the weight increased, and some of the telangiectatic fibromata disappeared.

In the author's opinion neurofibromatosis is due to congenital pluriglandular anomaly or dysfunction. The tumors arise in the perineural connective tissue as Recklinghausen has already shown. The large number of Ehrlich mast cells confirms the assumption that young granulation tissue is a factor. The part played by the nervous elements is proven. The growth produced mainly by the neoplastic formation of blood vessels of the most varied sizes. Old mast cells more show dilated lymph vessels, some of which form hollow spaces.

Der Oste. Woch. (2)

Molotkoff, A. G. *The Pathogenesis of Trophoneurotic Skin and Bone Changes and New Attempts at Their Surgical Treatment* (Die Pathogenese trophoneurotischer Haut- und Knochenveränderungen und ein neuer Versuch ihrer chirurgischen Behandlung). *Verhandl. d. Russ. Chir. Putschf. Ges.* Petrograd.

The origin of trophoneurotic lesions is a problem which has not been solved. The operative results

are not encouraging. Complete and permanent healing has been obtained only in superficial injuries of peripheral nerve trunks.

The author is familiar with the hypothesis which maintains the existence of a special trophic nerve apparatus and special paths. This was first advanced by Dreyfus and Morat in 1873 and recently revived by Pawloff the physiologist. The following clinical data are adduced in its support.

The absence of any dermal or skeletal trophic changes after complete, uncomplicated severance of nerve trunk.

3. The constantly observed grave trophic disturbances associated with nerve lesions characterized by severe pain. This is best explained on the basis of a parallelism of the trophic and sensory nerve paths.

4. The obstinate tendency to a delayed consolidation or the formation of pseudarthrosis in certain non-fractures in which the radial nerve is involved. Anatomical study of such cases led the author to conclude that the cause is an injury to a branch of the radial nerve entering the foramen humerale. A fracture of the humerus which failed to unite 10 years after an accurate bone suture (neurotrophic osteoporosis developing in the fragments) promptly united in six weeks after an analogous operation in which the degenerated radial nerve fibers were resected and a neurotaphy was performed.

Further clinical proof is furnished by seven surgically treated cases of chronic skin localization and bone suppuration: four due to tendon injuries and the rest to other traumata (freezing, or infection). The site of injury was the cauda equina in two, the brachial plexus in one and the tibial nerve in the popliteal fossa in one. Under aseptic conditions the nerve fibers were severed with sharp scalpel proximal to the site of the lesion and the neuritis and with regard to the posterior nerve roots and the segmental projection of given innervation area. Ulcerations which had resisted all local therapy for from eight months to four years then healed in from twelve to fifteen days. In one case a trophic ulcer of the heel of one and one half years' duration,

which followed simultaneous injury of the popliteal nerve and the femoral artery in Hunter's canal, a most radical Leriche sympathectomy had been carried out, the artery being resected for an aneurysm. Healing took place, however, only after neurotomy of the tibial branches of the sciatic nerve 7 cm. below the site of the injury. Sixty-five days later, in keeping with the usual rate of regeneration of about 1 mm. in twenty-four hours continuity was re-established and the symptoms recurred. The ulcer healed again when the altered nerve endings were resected.

The dystrophic process is of neuritic origin. The distribution of pathologic irritation occurs in centripetal direction. The point of origin is usually distal to the posterior roots.

The result of treatment, its degree and its duration depend upon the distance of the operation pro-

cedure from the centripetal neuritic process. A fact of importance in this connection is that the severance of the nerves distal to the site of the injury had no effect upon the trophic lesion of the foot, while the same procedure proximal to the injury resulted in rapid healing.

The stages of healing of ulcer are characteristic. As early as the second day after operation a quantity of laudable pus (pus bonum) is exuded in stead of the previous sanguinous secretion. New granulations are then formed, the callous borders desquamate and epithelium spreads remarkably quickly soon leading to epithelization and scar formation.

In a case of ulcers of both feet neurotomy of the most severely affected extremity was followed by healing in the foot not operated upon as well as in the foot treated. This suggested the presence of intracranial trophic anastomoses.

Besides the primary trophoneurotic lesions, reactive processes such as hypertrophy of the skin or nails are frequently found in the neighborhood of the disease focus. These are not the result of a disturbance of nutrition, but due rather to positive nerve irritation. Both the trophic depressions and the accelerations occur in the paths of the spinal nerves. The sympathetic system may be irritated also reflexly, thus leading to various vasomotor changes which must be differentiated from purely trophic changes. VOL. 12, CH. 12. SACCOZZI (Z.)

SYMPATHETIC NERVES

Kappis, M. The Etiology and Treatment of Perforating Ulcer of the Foot, with Remarks on Sympathectomy (Ueber Ursache und Behandlung des Hahn perforans, mit Bemerkungen zur Frage der Sympathektomie). *Klin. Wochenschr.* 1918, 35.

Perforating ulcer of the foot is generally looked upon as a trophic ulcer. Its exact cause is still unknown in spite of many hypotheses. According to the most recent theory, that of Leriche and Bruns, pathologic irritation from the site of over injury particularly a neuroma, is transmitted to the spinal ganglion and the spinal cord. Here it lessens reflex and this reflex in part returns by way of the periarterial sympathetic tracts to the periphery where it causes dilatation of the capillaries.

According to the view of the author, perforating ulcer of the foot is decubitus developing in an anesthetic or hypesthetic area of tissue in which there are trophic disturbances. In the majority of cases the reason for the failure of such ulcers to heal must be sought in fistula of the joint. As this fistula can heal only when the affected joint is extirpated the operation of choice is resection of the joint.

The author's observations are based on thirty-one cases of perforating ulcer of the foot, including thirteen cases of injuries of peripheral nerves, four

cases of syringomyelia, five cases of tabes, three cases of syphilis, one case of spina bifida, one case of per cauta (plus spina bifida occulta?) and four cases of indefinite diseases of the spinal cord.

Ulcers of the heel appearing after injuries of the nerves are difficult to influence. The most important part of the treatment is restoration of the nerve conduction. I seven of nine cases of ulcer of the ball of the foot, the heads of the first and the fifth metatarsal bones were resected whereupon the ulcer healed without reaction. A new ulcer appeared over the head of the fourth metatarsal bone in four cases but, like the others, healed smoothly after resection.

Of the sixteen patients with diseases of the spinal cord, nine were treated by resection or disarticulation of the toes. Healing resulted in every case. Particularly good results are obtained by resections in which the ulcer itself was not disturbed. Amputation or disarticulation comes up for consideration only in cases of extensive destruction.

The subcutaneous displacement of the sensory nerves of the skin, devised by Nordmann, seems to be worthy of recommendation.

Flap plastic has not been successful up to the present time, and not much is to be expected from ray treatment. The author reports three cases which disprove the neuroma theory of Leriche and Bruchung.

Case 1. The patient sustained gunshot wound of the sciatic nerve in 1915. In 1917 a perforating ulcer developed on the ball of the little toe. In April 1918 resection of the joint was followed by rapid healing. In May 1918 a neuroma as removed and the nerve set red. Six months later a new ulcer appeared over the ball of the fourth toe but after the expulsion of sequestrum healed spontaneously.

Case 2. The patient sustained gunshot wound of the sciatic nerve in July 1908. Nerve suture was done in August 1908. Subsequently an ulcer as large as the palm of the hand appeared on the heel, but gradually healed.

Case 3. In 1909 division of the tibial nerve was followed by an ulcer of the heel. In 1910 the neuroma as removed and the nerve was sutured. The ulcer did not heal but it cannot be denied that neuroma favors the development of perforating ulcer.

The author treated four cases of perforating ulcer by pen arterial sympathectomy of the femoral artery. In two good results as obtained. In case of glaucoma sympathectomy performed on the common carotid artery as successful.

WOLFGARTER (2)

Scharroff, W. N. Pen Arterial Sympathectomy in Spontaneous Gangrene (Zu Frage der peripheren Sympathektomie bei Spontangangraen). *Wiener Chir. Wochenschr.* 1921 73: 83.

In spontaneous gangrene the operations are recommended to improve the blood supply of the

distal limb (1) arteriovenous anastomosis by Wieting technique and (2) ligation of the vein by Opperl's method. The author has performed Leriche's excision of the pen-arterial sympathetic plexus in fifteen cases of spontaneous gangrene. This operation results in enlargement of the vessel, improvement in the blood supply and an increase in the blood pressure which is number of cases led to continuation of the necrotic part.

Scharroff reports the case of a man 30 years of age who had gangrene of the toes of both feet. Pulmonia as absent in both popliteal arteries. The blood pressure as 20 mm on the left side and 40 mm on the right. The gangrenous ulcerations are more extensive on the left foot. Pen arterial sympathectomy was performed on the left leg, and for purposes of comparison, ligation of the popliteal vein by Opperl's method on the right. In the left leg healing of the ulcerations occurred in sixteen days but the right leg showed no change. The patient is now able to walk on the left leg without discomfort.

In the discussion of this paper Opperl stated that he severs the sciatic nerve because this nerve contains most of the sympathetic fibers.

Lissayn stated that in estimating the value of Leriche's operation it must be borne in mind that in the removal of the arterial adhesion the circuit through collateral sympathetic fibers is permanently interrupted.

Hesse reported that he has had only temporary success with section of the sciatic nerve in cases of neuropathic ulceration.

According to Kraus section of the sciatic nerve may cause vasodilation of only short duration.

Newcox (2)

MISCELLANEOUS

Kreeman, J. J. and Riddell, T. E. Lumbar Spinal Puncture and Cisternal Puncture. *Voluntas* 1921 4: 1, 20.

The technique of cisternal puncture is not difficult and has advantages over spinal puncture especially dispensatory work.

A 25 gauge lumbar puncture needle is inserted in the neck directly over the prominent spine of the second cervical vertebra directed upward in the midline toward the level of the external auditory meatus and into the dense occipital ligament between the occipital bone and the first cervical vertebra. It then enters the subarachnoid fluid space in the cleft between the cerebellum and the medulla—the cisterna magna. The distance from the skin to this fluid space varies from 3 to 6 cm. Small file marks on the needle serve as guide and guard prevents plunging beyond reasonable and safe depth.

Thirteen cisternal punctures were done by the authors without serious consequences and with complete freedom from severe headaches. The patients arose immediately after the puncture and

returned to their usual activity. The most common complaint was moderate soreness or stiffness at the site of the puncture.

Cisternal puncture is indicated especially in spinal subarachnoidal block due to inflammatory exudate.
H. W. FINE, M.D.

Ingvar 8. On the Danger of Leakage of the Cerebrospinal Fluid After Lumbar Puncture. *Acta med. Scand.* 923 1916 67.

The author reports three deaths following spinal puncture, two of which presented intracranial tumors and the third chronic internal hydrocephalus. A critical review of the literature is given with discussion of the various theories advanced to account for the distressing symptoms (chiefly headache) which may follow this operation.

Largely from the theoretical point of view and consideration of the physiological data bearing on the origin of the spinal fluid and its pressure in relation to that in the epidural venous plexus it is concluded that headache results from leakage of the spinal fluid through the dural wound into the epidural space. This leakage is favored by the erect position and muscular effort. In cases of tumors of the brain it may permit the bulb and posterior cerebellar area to plug down into the foramen magnum, and when this occurs, the outlets of the fourth ventricle may become closed and an internal hydrocephalus may form, which will further increase the pressure on the bulb.

From these considerations the author recommends that spinal puncture be done in the recumbent position, with a small needle as is practicable and the patient kept in bed at least forty-eight hours after ward. If the symptoms indicate plugging of the bulb into the foramen magnum with secondary internal hydrocephalus, intravenous or intrathecal injections of hypertonic salt solution may be given for resorption of the ventricular fluid.

P. R. BULLOCK, M.D.

Jacobson, H. C. and Frumerie, L. Leakage of Spinal Fluid After Lumbar Puncture and Its Treatment. *Acta med. Scand.* 93 1916.

P. R. BULLOCK, M.D.

The authors report two cases of diagnostic spinal puncture in which this procedure was followed by severe headache. The treatment consisted of the intraspinal injection of normal saline solution until the manometer showed the pressure to be normal, and subsequent elevation of the foot of the bed.

Relief of the symptoms followed in a few hours.

P. R. BULLOCK, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Berry J. A. Suppurative Arthritis Simulating Acute Appendicitis. *Lancet* 93 of 435

The author reports a case of suppurative arthritis of the eleventh costovertebral articulation on the right side.

The patient, girl of 9 years, has a history of bronchitis, measles, whooping cough, and scarlet fever. Since the age of 3 years she has had numerous lumbago and lumbago pains in the right groin.

After a fall on February 27, 1909, she complained (pain in the right hip, but the next day this disappeared. On March 1 she returned from school because of aching back. On March 4 she had pain in the between and her temperature rose to 101 degrees.

Physical examination revealed tenderness in the right lumbar and in the right iliac. The temperature rose to 103 degrees F. and complaint made of tenderness over the right iliac fossa and the lower ribs on the right side.

The entire right side of the abdomen was rigid and tender. The right iliac fossa and internal iliac vessels. The right erector spinae muscles were spastic. The hip joint normal. Examination of the pelvis, urine, and stool gave negative results. The reflexes were slightly exaggerated. Osteomyelitis of the spine was ruled out by the absence of pain in the spine.

Appendectomy proved the diagnosis to be normal. On March 4, after the operation, the child became worse. On the night of March 5 her temperature rose to 103 degrees F. Death occurred March 7.

Postmortem examination showed pure growth of staphylococcus aureus in the iliac and pleural cavities. Numerous colonies of staphylococcus aureus found in the pleural cavity. The peritoneal stump of the hip joint, brain, and spinal cord were normal.

Upon removal of the pleura of the right side the anterior part of the eleventh costal rib joint was found to be eroded and the intercostal space between and below showed pus. In the lower part of the chest cavity, culture gave staphylococcus aureus. The cleavage of the rib was normal. The middle costal arch ligament on the right side had been partially separated by the pus.

In review of the literature no similar case was found.

Bloodgood, J. C. The Clinical Picture of Dilated Duct Beneath the Nipple Frequently to Be Palpated as Doughy Worm Like Mass. The Virchow's Tumor of the Breast. *Surg. Gynec. & Obst.* 93 435-436

Bloodgood finds that in the last few years the relative number of benign and malignant tumors

of the breast has changed, as compared with the decade ending in 1900. In looking over the figures for the ten years previous to 1900 he found that operation not indicated in less than 1 per cent and the tumor was benign in only about 1 per cent. In the last 100 cases examined by him the clinical picture was such that operation was postponed in over 50 per cent, and in the majority of cases was not performed. More than 25 per cent of the remainder the growths were benign.

The condition described in this article may be classified with chronic cystic mastitis. When the dilated ducts are situated in the nipple zone, doughy worm like mass beneath the nipple is felt on palpation. Exploration reveals large and small dilated ducts with distinct wall which contain brown, green, milk, or cream like material of various degrees of viscosity. When the tumor occurs in a zone of the breast outside the nipple area, it feels like diffuse mastitis, but has not the distinct edge or border of the diffuse non-encapsulated cystic adenoma.

Dilated duct within the nipple zone may give no evidences of their presence by pain, discharge from the nipple, retraction of the nipple, or palpable tumor. There is a relation between this condition and malignancy; there is no indication for operation if nothing can be made out on palpation but single or multiple doughy worm like mass beneath one or both nipples.

Unfortunately dilatation of the ducts beneath the nipple may be associated with palpable tumors of a different character and in addition, there may be retraction or fixation of the nipple, lumping, or fixation of the skin. In some instances the clinical picture so strongly suggests cancer that it seems only proper to perform the complete operation for cancer without exploration. In few instances the re-actant areas (periductal) is so marked that the tumor beneath the nipple has the induration suggestive of malignancy and when it is explored, cuts and looks like cancer, the inflammatory tissue may become obliterated and being emptied the duct.

A few cases assume the picture of an abscess beneath the nipple and result due to infection of dilated duct and in very few cases the area is outside the nipple zone, the clinical picture closely resembling that of cancer.

Of the twenty cases of diffuse dilatation of the duct situated beneath the nipple, such are considered in this paper fourteen are divided as clinically benign and one as malignant while in three the palpable tumor resembled an abscess. Bloodgood regards this type of dilatation of the ducts as a type of white breast. It is most common after the age of 45 years, and the subjects are usually at the

menopause or have passed it. It has been observed in women who have never borne children and in those who have lactated once or more often without trouble. Trauma is not an important factor. As a rule the patient consults the physician soon after the onset because of pain or tenderness in the breast or a discharge from the nipple. The condition may have an acute onset which may subside, leaving the palpable worm-like tumor or go on to abscess formation. The most important point in the diagnosis is the palpation of one or more doughy worm-like masses beneath the nipple. Experience seems to show that when the lesion can be recognized, operation is not indicated, but that when there is a definite picture of malignancy either exploration or complete extirpation must be performed.

McMURRAY HANCOCK, M.D.

TRACHEA, LUNGS, AND PLEURA

Gust, W. Bronchial Fistulae (Ueber Bronchialfisteln).
Deutsche Zeitschr. f. Chir. 9, cxvii, 9.

Bronchial fistulae are caused by trauma or inflammation. The distinction is made between internal and external fistulae and lip and cavity fistulae, terms indicative of the etiology. Reference is made to retrograde breathing and the possibility of proving the presence of fistula by simple physical methods. Stress is laid upon aphonia in some cases. Occasionally these fistulae heal spontaneously. In cases without retention of secretion operative measures are indicated. Reference is made to individual methods of operative closure and to the indication for the establishment of an artificial fistula in cases of inoperable tumors of the intrathoracic air passages (Glottic fistula).

Eight cases observed in the Leipzig Clinic are reported.

JERRY (Z)

Breccia, G. Pleural Pressure and Lung Collapse in Artificial Pneumothorax (Pressione pleurica collasso polmonare nel pneumotorace artificiale).
Pedim. Rome 19, 3, xix, sez. med. 49.

I have previous publications on artificial pneumothorax Breccia (Dowed Fodanini's dictum), always maintaining that it is necessary to immobilize the lung. In practice, however, this is only rarely possible. Instead of an absolute collapse and complete pneumothorax there is often only sufficient collapse and a sufficient pneumothorax to mitigate the morbid syndrome.

In every case there is a certain optimum point of pulmonary compression which corresponds to a more or less complete collapse. In some cases this may be obtained. If pleural pressure even manifestly negative. Above and below this critical point the favorable action of the pneumothorax ceases and the phenomena of intolerance appear. Therefore Breccia now believes that the best rule to follow is to employ the minimum pleural pressure which will maintain the best pulmonary collapse.

W. A. BRECCIA

Johnson, A. Primary Cancer of the Pleura in Man and Wife. *Acta med. Scand.* 93, supp. 11, 30.

It is believed by many that the cause of carcinoma is not a condition in the cell itself but some kind of germ infection. The author reports an instance of the occurrence of primary cancer of the pleura in man and wife. The man, who was 55 years of age, had suffered from attacks of gout but had never had syphilis. Complaint was made of shortness of breath. The clinical diagnosis was pleural effusion on the right side. Tapping was done on three occasions. At first the fluid was only slightly blood stained but later contained considerable blood. X-ray examination showed a compact shadow in the lower two-thirds of the right lung. About a year later metastatic tumors were found on the ribs and in the region of the gall bladder. At about the same time the patient coughed up a concretion. Subsequently herpes zoster developed on the right side of the thorax. The patient died after an illness lasting sixteen months.

The man's wife consulted the author nine years later at the age of 65. Examination revealed a large pleural effusion on the right side. On tapping, this yielded almost 2 liters of highly blood stained fluid. Microscopic examination showed the exudate to contain large masses of cells. X-ray examination confirmed the diagnosis of pleural cancer. Fifteen years previously the patient had had erythema nodosum, and six years later herpes zoster on the right arm. The patient died during an attack of influenza.

Postmortem examination showed a primary cancer of the right pleura with metastases in the great omentum, the peritoneum, and the retroperitoneal lymphatic glands. Histological examination confirmed the diagnosis and showed numerous large cells with the chromatin arranged in stellar form within a lighter zone.

H. W. FRANK, M.D.

Montenegro V. Malignant Tumors of the Lung (Sobre tumores malignos del pulmon). *Pres. de la Soc. Madrid*, 923, xiv, 39.

Montenegro reports the methods by which he is able to exclude all other conditions except a malignant tumor of the lung in a man of 73 years. The principle symptoms were a loss of 10 kgm in weight during the previous six months, the expectoration of blood, and occasional fever. The X-ray showed a mediastinal shadow extending principally toward the upper part of the right lung. In the lower part of this lung and in the other lung the invasion was less advanced. The picture suggested lymphosarcoma originating in the mediastinal glands and extending by the lymphatics to the lung and pleura.

Palliative treatment was given. Thoracic pain, which was beat at the first examination, developed later. Death was preceded by cedema of the lower limbs and the symptoms of cerebral excitation.

W. A. BRECCIA

HEART AND PERICARDIUM

Burlant, F. Operation in Two Cases of Cardiac Wounds (Z. experiment. Chirurgie) C. P. 122 1 1 0 10 5 5

Case 1. The patient, an 18 year old girl, collided with the edge of a desk and in falling so drove it into her chest. A needle she had run into the front of her dress. At operation four hours after the injury the cartilage of the sternum was resected and a 3 cm. opening was made in the pericardium. The needle was found stuck in the wall of the right chamber. The puncture wound did not bleed even after extraction. The removal of the needle was followed by suturing of the lacerations. The patient made an uneventful recovery.

Case 2. The patient was a 36 year old man who injured a branch of the left coronary artery in a ruptured muscle. At operation 12 hours after the injury a flap was taken out and inserted inside over the third, fourth and fifth ribs. The pleura

found to have been pierced and the pericardium was found to have been lacerated. The pericardium was greatly lacerated and black. At the left bronchus opening 1 cm. broad from which blood clot protruded. On the removal of the clot profuse hemorrhage occurred. The opening was rapidly

largened. The puncture wound of the heart was 8 mm. long but closed on the upper layers of muscle fibers. The branch of the left coronary artery had been severed at the puncture

of its middle and upper thirds. Circulation was followed by closure of all layers without drainage. The wound healed by primary intention, but after the operation there were several attacks caused perhaps by nervousness of an area of heart muscle or disturbance of conduction. (Lancet) 2

ESOPHAGUS AND MEDIASTINUM

McKinney, R. Some Phases of Esophageal Stenosis. I. *Old Rhinology* 9 121 47

Throat stenosis of the esophagus may develop from squamous due to local irritation resulting in thickening of the esophageal walls. This stenosis may prove dangerous to life and yet may be non-malignant. The author considers that direct examination of the stenosis through the esophagoscope is essential to determine its character. He reports four cases in which the diagnosis of benign esophageal stenosis with the esophagoscope and the local treatment.

In one case (fourteen years duration) the stenosis diagnosed a benign and dilated through an esophagoscope. In the second case which also was diagnosed benign stenosis, the irritative lesion proved to be local involvement of the cardiac end of the stomach with ulceration of the stomach. In the third case there was probably an associated neurosis. In the fourth case the stenosis occurred by pressure from a tumor of the mediastinum of the esophagus. (Walter C. B. Brit. M.D.)

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Hey Groves, E. W. A Note on the Operation for the Radical Cure of Femoral Hernia. *Brit J Surg* 9 3 5, 539

The thor reports in detail a series of twenty cases. The advantages of the combined femoral and inguinal operation are enumerated as follows:

1. In cases of strangulated hernia it gives ample room to deal with the damaged bowel and, if necessary, to perform resection.

2. It has all the advantages of an inguinal approach, i.e. the possibility of following the femoral canal from above without the necessity of dragging up the hernial sac through the femoral canal.

3. It allows the turning of the conjoint tendon to Cooper's ligament with great precision undisturbed by the overlying Poupert's ligament.

4. Poupert's ligament, being freed from tension, can be snugly utured as extra covering over the line of suture between the conjoint tendon and Cooper's ligament.

There has been no recurrence in the author's cases. F. C. ROBINSON, M.D.

Erdman, S. Inguinal Hernia in the Male. *J Surg* 9 3 LXIV, 7

This article is based on 1,003 cases of lectu operations for inguinal hernia performed by nineteen surgeons. Of these 89.5 per cent have been followed to determine the late results. Of the latter group 6.7 per cent had recurrences.

TABLE I

Type	No.	Operation		Recurrence	
		Open	Per cent	Open	Per cent
Direct	661	51	7.7	51	7.7
Total	1,003				

TABLE II TIME OF REFERENCE FOLLOWING OPERATION IN 978 TREATED CASES

Operation	Type	No.	Recurrence first noted				Total within 5 years	Per cent
			Within 1 year	Between 1 and 2 years	Between 2 and 3 years	Between 3 and 5 years		
Open	661	51	25	19	6	1	51	7.7
Total	978	51	25	19	6	1	51	7.7

Several causes for early recurrence became evident in the series studied. These were as follows:

1. Direct was overlooked at operation. I. In instances the operator tried to close the sac, but within three months definite hernia was

present. All five failures occurred in cases diagnosed as bilateral direct hernia. The thor experience indicates that such cases the peritoneum should be opened and the sac taken up, even if no definite sac is recognized.

Incomplete repair because of the patient's poor physical condition.

Postoperative accident. The mortality was 3 per cent. Only one of the deaths was due to wound infection. The two others were caused by pneumonia and what appeared to be an embolus. Bilateral hernia was present in about 37 per cent of the cases, and in the follow-up records it was found that bilateral hernia developed eventually in 37 per cent. Oblique hernia was bilateral in 36 per cent of the cases and direct hernia bilateral in 69 per cent. The combination direct indirect hernia was bilateral in 63 per cent. These are subpercentages of the bilateral group.

The Bassini operation was used for nearly all patients over 30 years of age. For many of those below 30 years the Ferguson non-transplantation method was used. This method seemed satisfactory when the musculature was good and the hernia small. The importance of high ligation of the sac is mentioned. Twenty-five per cent of the cases had direct hernia and in most of these the conjoint tendon was not recognizable. It is believed that in cases of direct hernia the cord should always be transplanted, and firm and deep closure of the neck triangle of Hesselbach should be done.

Of fifty-two cases of operation for recurrent inguinal hernia which were traced, 3 per cent had a recurrence.

The femoral vein was injured with the needle once, but a lateral ligature was applied and recovery was uneventful. In one instance adherent small intestine was opened and despite immediate suture the wound became infected and the hernia recurred. The adhesions were divided, six cases but without subsequent effect.

In seventy-seven early cases appendectomy as done through the hernia incision, but this practice was discontinued as routine procedure because of the danger of hemorrhage or infection due to inadequate exposure.

Non-descent of the testes as found in twenty cases. All of these were treated by the Bevan method. In three, the results were good, but in the remainder the testes remained in the upper third of the scrotum, and in seven they failed to increase in size. Orchidectomy was performed five times.

Division of the deep epigastric vessels as practiced in twenty-three cases in which the hernia was of the middle back direct-indirect type saddled across the epigastric vessels with side mouth sac.

TABLE III.—THE RESULTS OF 101 PERITONITIS TYPE OF OPERATION IN 98 TREATED CASES

Type of operation	Of 101 peritonitis			Direct hernia		
	Operative cases	No.	Per cent	Operative cases	No.	Per cent
Removal of infected area (and first intraperitoneal lavage)	12	7	58.3	11	22	50.0
Removal of infected area (and first intraperitoneal lavage)	8	4	50.0	4	20	50.0
Total	20	11	55.0	15	42	56.0

In 11 per cent of these the condition recurred, and in one case death resulted from pulmonary embolism.

The average stay in the hospital in cases of oblique hernia was 37 days, while in cases of direct hernia it was 15 days. Recurrences developed in 10 per cent of the infected cases. Scrotal infection occurred in 13 per cent, but in very few following operation for direct hernia.

DR. H. W. CULX, M.D.

Fraser F. The Principles of the Surgical Treatment of Infection of the Peritoneum. *Br Med J* 1933; 3: 130.

The author contrasts the treatment of peritonitis twenty-five years ago with the present method.

Formerly the belief that the peritoneum had little power of resisting or controlling infection and that intestines whose peritoneal coat was inflamed tended to become paralyzed and unless stimulated by artificial means, destined to condition of acute obstruction, led to the adoption of the following technique: removal, when possible of the main source of the sepsis; cleansing of the peritoneal cavity by washing; drainage by tubes or other mechanical means; the administration of purgatives and abstinence from morphine.

Today the practice advocated is based upon the principle of resting inflamed structures and the belief that the peritoneum will be able to resist and control infection if the main source of sepsis is removed. The peritoneum is washed or drained; purgatives are not administered, and morphine is given.

When bacteria gain access to the peritoneal cavity there is rapid and copious protective fusion containing phagocytic cells which destroy the bacteria. A fine layer of fibrin forms over the intestinal surface which seals off the infection and protects the endothelium from the action of toxins. Irrigation destroys this protective membrane and does not reach every part of the peritoneum. Since this has been discontinued the mortality of peritonitis has greatly decreased.

The following conditions indicate the introduction of a drain into the peritoneal cavity for short time (see column 1) the operative site which cannot be completely stopped; drainage at the point of expected leakage of pus; pus may discharge if signature cuts through softened cystic duct after

the removal of a gangrenous gall bladder; a localized abscess cavity and drainage of a primary focus of infection not removed.

Rest to the intestines and peritoneum may be secured by the administration of morphine and bismuth from food. The author does not find that morphine induces paralytic ileus. Flattening of the intestine is easily relieved by means of a firm tube or by enema and pituitrin.

WALTER C. B. BERT, M.D.

Arnl, K. Experimental Investigations on the Gastrointestinal Movements in Acute Peritonitis (I) Experimentelle Untersuchungen über die Magen-Darmbewegungen bei akuter Peritonitis. *Arch. f. Path. Pharmacol.* 1933; 43.

Arnl found that the intraperitoneal injection of 0.5 c.c. of a 1 per cent solution of Lugol's iodine solution per kilogram of body weight produced a typical serofibrinous peritonitis characterized not only pathologically anatomically but also roentgenologically by marked regularity in its course. The dose was reached its maximum between forty-eight and seventy-two hours and spontaneous healing occurred after a week. Slight adhesions appeared most distinctly forty-eight and seventy-two hours after the injection of iodine and disappeared completely after about 6 days.

The results of intraperitoneal injection of turpentine were less constant. A fatal dosage caused a typical hemorrhagic peritonitis but smaller doses were followed by a serous peritonitis or hyperemia of the omentum. After repeated injections an aseptic suppurative peritonitis resulted in only one case.

On the intraperitoneal injection of twenty-four hours cultures of staphylococcus aureus, streptococcus pyogenes, or bacillus coli in fatal doses, all of the animals showed the most hyperemia of the omentum, but the injection of 5 c.c. per kilogram body weight of mixture of cultures of staphylococcus and bacillus coli caused severe changes in the peritoneal cavity. Thirty per cent of all the animals died.

A marked retardation of the gastro-intestinal movement as demonstrable roentgenologically in iodine turpentine and bacterial peritonitis. On using rabbit intestine Lugol's solution acted as a stimulant. After the division of all the branches of the splanchnic nerve in healthy animals and those with peritonitis the emptying of the gastro-intestinal tract became more rapid. The therapeutic effect of insulin on gastro-intestinal paresis was also demonstrable in bacterial peritonitis. *Records* (7).

GASTRO-INTESTINAL TRACT

WIII, G. F. Congenital Hypertrophy of the Pylorus. *Br Med J* 1933; 3: 379.

The author experiences with congenital pyloric stenosis covers a period of twenty-four years and a total of 248 cases. In this article he summarizes the findings in these cases and reviews the treatment.

Of the 248 patients, only thirty-seven were females. In about 50 per cent of the cases the child was the first born. In four instances there were two cases in the same family. The vast majority of cases have their onset within the first six weeks of life. The most important symptoms are persistent vomiting, constipation, and loss of weight. Visible peristalsis and an abdominal tumor are always present. In 225 treated cases there were 56 recoveries and thirty-nine deaths.

During the past twenty-four years the treatment has undergone many changes. The author has seen a few cases in which the tumor and visible peristalsis disappeared spontaneously under simple dietary régime. Of seventy-eight patients treated by gastric lavage, forty-three recovered and thirty-five died. Such cases are instructive as to the spasmodic origin of the hypertrophy.

With regard to the operative treatment the author states that the Rammstedt operation is simple, rapid, and exceedingly efficient but has considerable mortality. In twenty-eight cases in which this operation was performed there were eleven deaths from hemorrhage, shock, or collapse. The author has therefore abandoned the procedure in his own practice and is now using the operation of forcible dilatation. In forty-six cases treated thus in the past eight years there was only one death. The low mortality still attributes more to the skill of the surgeon who performed the operations for him than to the operation itself. H W F W, M D

Karatykin, W M. Syphilis of the Stomach (Zur Frage der Magensyphilis). *Sibirsk Med J* 9 p 15

The author reviews 103 cases. Gummatous and sclero-gummatous infiltrations of the stomach usually develop in the submucosa, generally form circumscribed tumors, and are rarely of a diffuse character. The following stages of the process should be differentiated: infiltration, ulceration, and contraction.

Histologically gummatous infiltrations consist of connective tissue profusely infiltrated by arterial, venous, and capillary vessels filled with blood and large number of lymphoid cells which are often grouped in small islets in the granulation tissue. Such gummatous infiltrations become soft, the mucous membrane is broken through, and an ulcer forms with infiltrating borders of gummatous tissue.

A primary gastric ulcer may also arise as a result of the vascular changes caused by the syphilis, chiefly through perivascular cellular infiltration. This ulcer is in no way distinguishable from the ordinary round ulcer.

Clinically, syphilis of the stomach runs its course as: (1) a chronic syphilitic gastritis which differs little from the ordinary chronic gastritis except that it is refractory to every non-specific form of treatment; (2) gastric ulcer—the most frequent form according to some statistics 50 per cent of all gastric ulcers are syphilitic ulcers—a characteristic pain

at night; (3) a neoplasm, which is usually interpreted as carcinoma; and (4) an infiltration which causes pyloric stenosis. Specific treatment leads to a rapid cure in syphilis of the stomach.

The author reports a case characterized by severe gastric symptoms, severe pain, frequent vomiting, and emaciation. On gastric analysis, the gastric juice of the fasting stomach was of the character of a sero-purulent exudate and consisted exclusively of pus cells (100 and more in a microscopic field). Hydrochloric acid was absent. As a phlegmonous gastritis could be excluded, the author believes the condition was an ulcerating process complicated by suppurative inflammation. The Wassermann reaction was 4+. Syphilis was suggested also by nodular formations in the liver and scars on the leg. Specific treatment with neosalvarsan and potassium iodide caused rapid improvement. GARCOW (2)

Payr, E. Old and New Aids in the Differentiation of Ulcer and Cancer of the Stomach (Altes und Neues zur Unterscheidung von Ulcerstumor und Krebs am Magen). *Zentralbl f Chir* 9 2, xix, 706

The differentiation between ulcer and carcinoma is often not easy even when the stomach is exposed, but is of great importance with regard to the choice of operation.

In cases of ulcer there is an active arterial reaction, while in cases of cancer the dull color of the dilated veins predominates. Ulcers as a rule are without sharply defined borders, their hardness decreasing gradually and during the operation an ulcer becomes softer after ligation of the afferent and efferent vessels in the small and large omentum, while cancer remains unchangeable.

In cases of ulcer extension into the surrounding tissues occurs earlier and is more intensive than in cases of cancer. In cases of pyloric cancer which has not yet extended to the serosa the longitudinal muscle fibers are spread apart by the tumor extending through the pylorus and become visible as parallel fibrous bands on the surface of the stomach.

When, in cases of ulcer with a deep, smooth cavity, the opposite normal wall of the stomach is pressed in with the tip of the finger the mucous membrane remains adherent in the ulcerous depression until the next muscle contraction. In cases of ulcerous cancer with its irregular ragged, shallow crater this occurs very seldom.

In cases of ulcer the mesocolon fold is occasionally stretched out flat and adherent to the stomach, but its folds are not joined together by neoplastic infiltrations as is often the case in cancer.

The network of lymph vessels which sometimes becomes visible in cases of ulcer as the result of stasis must be differentiated from the lymph-vessel carcinomatous which is frequently found in cases of cancer. In the latter fine granules and a paste-like substance can be scraped out with the knife, while in the former an incision releases a whitish fluid.

VON TAPPINER (2)

has been based on bleeding cases which came to operation, and that if the mortality of medical treatment were estimated only for cases with severe bleeding the figure would be much higher. The mortality of medically treated cases with severe bleeding is at least 5 to 4 per cent. A mortality between 30 and 50 per cent in surgically treated cases, based on general statistics of various operations, late operations, and cases in which medical treatment was given up, cannot be used for comparison.

The author reports on fifty-one cases with ten deaths, a mortality of 20 per cent. Only figures of early operations should be compared with those of cases treated medically. When this is done the mortality in the author's cases was only 3 per cent as compared with 20 per cent in medically treated cases (Charmont).

The objection that the bleeding ulcer is often not found is beside the mark, since even flat uncalculated ulcers can always be discovered if every inflamed area in the stomach is examined closely as advised by von Hacker and enlarged lymph nodes are examined accordingly. The method of von Haberer. The objection that resection for the certain control of hemorrhage is a procedure too severe is not valid as early operation gives almost the same result as the usual reaction. The author advises early operation from twenty-four to forty-eight hours after the onset of severe bleeding, at least in cases of chronic ulcer as at this time life-endangering anemia has not developed and therefore the result will be more favorable. In certain operations there is only one death (following ineffective arrest of bleeding after gastro-enterostomy). Early operation prevents fatal hemorrhages from erosion and perforation. The author reports in such cases. The patients are now symptom-free, whereas those treated medically must eventually come to operation.

The diagnosis of callous penetrating ulcer is not difficult. Constant and severe pain points to penetration into the pancreas in which case bleeding is an unmistakable sign. In duodenal ulcer severe hematemesis may occur if the erosion is proximal to the duodenal stenosis. Cessation of the hematemesis does not warrant the conclusion that the hemorrhage has ceased as closure of the cardia end may be produced by distention of the fundus. A case of this kind is reported. In uncertain cases an exploratory laparotomy is indicated if the history and findings exclude bleeding ulcer. Medical treatment should be given. The author did not operate in eight cases of acute hemorrhage, three cases of parenchymatous bleeding, one case of arteriosclerotic bleeding, one case of chronic case in which removal of the hospital, as contra-indicated, one hopeless case of perforation, and one case in which operation was refused. The best hematostatic is resection. In cases of duodenal ulcer this is not possible if the ulcer reaches the papilla and the choledochus can no longer be isolated from the lacerous tissue. In such cases ligation of the pylorus with heavy silk

posterior gastro-enterostomy, the application of gauze pads against the duodenum which arches toward the abdominal wall and the use of a compression bandage to press the pads and the anterior duodenal wall against the posterior wall and the bleeding ulcer reindicated. The compression may be released in from twelve to twenty-four hours. The thrombus can be washed away as the pylorus is closed off. Gastro-enterostomy is contra-indicated in acute hemorrhage, especially in penetrating ulcer. Ligation of the arteries at the edge is of value only if the ulcer has penetrated a plexus and the bleeding results from this. Cauterization is employed only to check bleeding from a small superficial vessel, never for bleeding due to erosion.

The result of operation depends on the degree and duration of the anemia. The prognosis is poor in cases with bleeding of four to seven days duration, small frequent pulse and an almost imperceptible radial pulse. Blood transfusion is also probably valueless if the damage to the parenchymatous organs is too great. Early operation gives the best results.

Thirty-six cases were operated upon under local anesthesia and fifteen with the addition of ether. Care must be taken in the administration of opium. Because of the anemia, 5 per cent solution should be used. Morphine should be avoided.

If the after-treatment all available remedies for combating the anemia must be employed. If necessary a direct blood transfusion should be given. Whether the latter should be performed before the operation or whether the bleeding should be stopped first must be decided in each case. Bleeding from small vessels can be arrested by increasing the coagulability but not hemorrhage from erosion.

Zurich (Z)

Roberts, C. R. The Roentgen Ray as an Adjunct in the Treatment of Advanced Cases of Carcinoma of the Stomach. *Am J U Med* 9:3:133

Although this article is based on the observations in only one case, this case presented excellent opportunities for thorough study. It was fairly representative of the great majority of cases of gastric carcinoma which come for diagnosis and treatment when the disease has progressed so far that cure by radical operation is out of the question. As in many of these cases obstruction must be relieved by operation, it was thought that further amelioration of symptoms and possibly retrograde changes might be brought about by roentgen therapy applied subacutely.

In the case reported the diagnosis was made clinically and by roentgen examination. Operation was done but as radical removal was found impracticable only a gastro-enterostomy was done. This was supplemented by roentgen ray treatment. Marked improvement resulted and continued over a period of fifteen months. The patient then died of carcinoma of the liver.

The experience in this case as so remarkable and so different from that of similar cases in which the roentgen ray was not used that the author is convinced this combination of operation for the relief of obstruction with treatment of the growth by the roentgen ray a method which holds out great promise. Possibly some of the cases may be cured entirely but if not, the prolonged relief afforded is certainly well worth the labor, expense and distress of the operation. Roentgen therapy is easily applied, and the modern technique the danger of it toward recidivism reduced to the minimum.

ABRAHAM HARRISON, M.D.

Mayo, W. J. Radical Operation on the Stomach, with Especial Reference to Mobilization of the Lesser Curvature. *Surg. Gynec. & Obst.* 93: 447.

Carman emphasizes the importance of correlating the clinical examination with the roentgen examination, a point often neglected by diagnosticians who throw the entire diagnostic burden on the radiograph instead of using the latter as an aid to, and an extension of, the clinical examination.

INDICATIONS FOR RADICAL OPERATIONS ON THE STOMACH

Radical operations for cancer of the stomach have attracted the attention of surgeons for forty years and for the last ten years have been resorted to with increasing frequency in cases of benign gastric lesions.

Gastro-enterostomy will cure more than 90 per cent of duodenal ulcers and the pyloroplastic operation of Finney with excision of the ulcer will do at least 5 per cent to the successful surgical group. There remains, however, a small but definite group of duodenal ulcers with deep excisions which cause severe hemorrhages in which gastro-enterostomy will fail to relieve the hemorrhages and the pyloroplastic operation can not be applied. In such cases, at least partial gastrectomy of some type is the operation of choice.

The field for partial gastrectomy is much wider than cases of gastric ulcer than in cases of duodenal ulcer. Gastric ulcers are usually greater in extent. They often slowly perforate forming encysted abscesses, the pancreas, and lead to the formation of extensive and crippling adhesions. Hemorrhages from these deep excisions are not infrequent and may prove fatal. At best in cases of the larger ulcers, crippled, inefficient organs remain after excision of the ulcer with or without gastro-enterostomy. For the smaller gastric ulcers along the lesser curvature which comprise about 75 per cent of ulcers of the stomach, the conservative cautious excision of Balfour with gastro-enterostomy has proved successful in at least 90 per cent of the cases to which it has been applied. For extensive ulcerations in the vicinity of the pylorus, the partial gastrectomy of Rodman (Billroth I) has held steady place in the esteem of the conservative surgeon.

It has shown that the cases of larger ulcers of the body of the stomach gastric resection in continuity give satisfactory results. The Billroth II and the Pödy and the Balfour Pödy methods of partial gastrectomy all have their special fields of usefulness. Each case must be treated on its merits and the decision as to the procedure in a given case cannot always be made until surgical exposure makes possible a careful examination of the lesion.

The author's opinion is a 5 per cent mortality following radical operations for cancer of the stomach is justifiable and gives just operability. If he finds that his mortality is running under 10 per cent he extends the field of operability accepting cases for operation that previously he considered inoperable. His practice has resulted in remarkable success in certain cases. A mortality of 5 per cent following partial gastrectomy for ulcer of the stomach may with difficulty be justified and yet if partial gastrectomy is applied only to cases of ulcers and antral and external ulceration and cases in which relief has not been obtained subsequent to previous operations, the mortality according to the author's experience will be approximately 4 per cent. If patients with small ulcers and in good condition are operated on, this anastomotic mortality can be brought still below 3 per cent. If the surgeon persists in his statistical results with regard to operative mortality leads him to apply the radical operation to the extremely safe cases and to use the less radical procedure on the dangerous type of case, which perhaps could be justified from the standpoint of risk the mortality can be decreased to 1 per cent. If in addition the surgeon accepts for radical operation patients with duodenal ulcers who are in good condition, there is no reason why the mortality following partial gastrectomy in skilled hands cannot be reduced to less than 3 per cent, making a result in good showing contrasted with gastro-enterostomy and pyloroplasty.

Admitting the force of the argument that partial gastrectomy permanently removes the ulcer-bearing anastomotic controlling portion of the stomach, the author's personal experience has not yet led him to believe that partial gastrectomy has so wide an application to peptic ulcer.

THE MOBILIZATION OF THE LESSER CURVATURE OF THE STOMACH

Attention is called to the fact that the lesser curvature is the most important portion of the stomach. Cardiac fixation of the stomach is seldom an obstacle to successful operation, and we know how to liberate the pyloric end. Therefore, to the great majority of radical gastric operations the lesser curvature is the key to the anatomical lock which interferes with the liberation of the stomach. If one studies the neurovascular of the stomach as related to the venous and lymphatic connections of the lesser curvature it is apparent that the bands which hold and fix this portion of the stomach can be seen readily to be operation and divided. The

success of the procedure depends on early ligation of the gastric artery as close as necessary to the coeliac axis, depending on the location of the growth in the stomach. After separation of the gastro-hepatic omentum from the under surface of the liver the distal end of the gastric artery is held taut and the artery glands, fat, and unyielding structures are dissected out of the lesser curvature toward the pylorus, the lateral vessels being caught and tied in succession as the holding bands are cut. The lesser curvature elongates remarkably and in favorable cases the snipping of fibers here and there will permit the esophagus to be drawn into view so that total gastrectomy can be performed if desired. Complete gastrectomy is sometimes indicated.

The Billroth I operation is again coming to the front, not only for cancers located in the pyloric end of the stomach, but also for many ulcers of the lesser curvature. This method has a wide field of application. Instead of removing an unnecessarily large area of the stomach as was done by the older form of partial gastrectomy, it removes the disease, saves the normal stomach, and restores the gastro-intestinal canal by uniting the duodenum to the amputated end of the stomach.

In certain persons the shape, position, and movability of the stomach and the looseness of its attachments make it comparatively easy to remove the pyloric half and still directly anastomose the end of the gastric stump to the duodenum. If the end of the gastric stump is not more than twice the size of the end of the duodenum, the difference in caliber can be touched out by placing two sutures on the gastric side to one on the duodenal side. It is surprising how smooth such an anastomosis will appear when completed.

Schoemaker as the first to free himself entirely from the Billroth prejudice. He recognized fully that the fatal suture angle did not occur when modern technique was used and showed that in a considerable percentage of cases the extensive removal of the lesser curvature of the stomach with sufficient of the pyloric end to accomplish the purpose of the operation would make possible direct union between the cut end of the stomach and the duodenum. Experience in the May Clinic is similar but less carefully thought-out procedures have led to the acceptance of the Billroth operation as primary procedure on ulcers and carcinomata so situated on the lesser curvature and pyloric end of the stomach as to permit its application. The value of the method has been shown particularly in the last few years since the lesser curvature of the stomach has been properly mobilized. After the application of the Billroth method there is a tendency for the stomach to drop to the left of the spine, its weight exerting an injurious strain on the suture line uniting the end of the duodenum to the gastric stump. This difficulty has been overcome in these cases and also in cases in which following removal of gastric ulcers or Finney pyloroplasty there is tension due to the dropping of the stomach

as a whole to the left of the spine. A point on the anterior wall of the stomach sufficiently far to the left is chosen, and the stomach is drawn to the right and attached to the suspensory ligament of the liver by several catgut sutures so as to bring the entire anastomosis to the right of the spine. There has been no suture leakage, and gastro-duodenal drainage is greatly improved.

Degawa W. F. A Few Remarks Regarding the Character of Digestion After Operations on the Stomach and Intestines (Einge Wort über den Charakter der Verdauung nach Operationen am Magen und Darm). *N.utsche Wochenschrift*. Tokio. Gakusan, 9 p. 3.

The pyloric portion of the stomach not only takes part directly in gastric digestion but influences the secretion in the fundal portion in a reflex manner. In the isolated fundal portion no secretion takes place on the ingestion of food, but when the pyloric portion is isolated a plentiful secretion occurs in both the pyloric and the fundal portions.

After gastro-enterostomy evacuation of the stomach takes twice as long as normally because the section effect of the rhythmic contractions of the pylorus is lacking and the fundal part must overcome the resistance of the gastro-enterostomy opening which is kept closed by the stomach and gut tones.

The second phenomenon noted, especially after resection of the stomach is considerable diminution in the acidity. The third is the backflow of the transpyloric secretions into the stomach. All these deficiencies of gastric digestion may be corrected by the intestine.

Dogs subjected to resection of the stomach and gastroduodenostomy by Kocher's method soon recovered and showed no differences from dogs not operated upon. Dogs subjected to operation by the Billroth method remained lean, often suffered with vomiting, and died as soon as they were given coarse food. After gastric resection the duodenum becomes enlarged and, like a newly formed stomach, serves as a food reservoir. The gut works up the food in a compensatory way and resorption occurs chiefly in the lower part of the small intestine and the colon.

Resection of the gut has been studied experimentally by Sotomajew and Skasow. Resection of one-half the small intestine is usually tolerated by man as well as animals. Eighty per cent of the small intestine is the maximum that can be resected. Extensive resection of the small intestine is followed by diarrhea, loss of weight, thirst, and abnormal appetite. In time these usually cease.

After extensive resection of the ileum there is a compensatory increase in gastric secretion—enzyme digestion of proteins—and the jejunum takes up the digestion and resorption of carbohydrates and fats. After resection of large parts of the jejunum the work of compensation falls upon the ileum. If the ileum also is resected at the same time, intesti-

inal digestion is taken up by the large intestine. Resection of the large intestine causes no change in nutrition. GARDON (2)

Colomers, F. Spastic Ileus I. Grippe (Ueber spastischen Ileus bei Grippe) *Z. Heilk. Ch.* 9, 189, 91

The authors report three cases of spastic ileus (grippe). All came to operation on account of the symptoms of ileus. At operation spastic contraction of the intestine was found.

Very often the diagnosis of intestinal grippe is made when symptoms of ileus are pronounced. Therefore it is better to make a small incision in the ileum. It is under local anesthesia that one overlooks true ileus.

The etiology of intestinal grippe is not yet clear. It may be an effect on the intestinal musculature from the central nervous system, or irritation caused by diseased glands of the mesentery, or a toxic effect caused by the contents of the intestine.

In the literature only Schmeiden Mann (1), Mann, and Alexander have described similar cases. (1) (2)

Bárány, T. Duodenal Gastric Motility (Ueber diejenige Motilität des Duodenums, welche die Motilität des Magens bedingt) *Monatsh. f. Ch. u. G.* 11, 9

The excitation of the pyloric and peristaltic in duodenal ulcer is accompanied by an increased rate of emptying and by an inhibition of the duodenum is lessened. Duodenal gastric motility. The excitation of the gastric musculature is commonly described as secondary to gastric disease. Von Bergmann and his school regard gastric motility as primary. It has been proved, however (Kocher, M. Gold, and others) that after section of the vagus nerve the well heightened muscle contraction of the stomach remains unchanged. The contraction of gastric peristalsis is regulated by the nervous system of the stomach, the plexus of Auerbach.

The excitation of the gastric musculature is through the plexus of Auerbach independently of the vagus, explained on the basis of the stimulation of the lower and stretching the proximal part of the stomach. There is muscle excitation and distention at the point where muscle inhibition (section of the extrinsic nerves). The constant irritation of duodenal ulcer therefore causes inhibition in the distal part of the tract. Not only is the muscle function of the proximal part of the stomach inhibited by the local but also by the distal (Skinner, Roman, Auerbach). It is established by the thoracic and abdominal dissection that the vagus nerves in the duodenum itself are independent of irritation of the vagus. The distal muscle inhibition is itself by the tone of the bulbous or the duodenum in the presence of residual for some time after the emptying of the stomach (MacLay) enlargement of the bulbous and distention of the bulbous and distention of the bulbous.

In the lower duodenum. The chief rôle is played by gastric hypermotility and insufficiency of the pylorus but the tonic also contributes greatly to the enlargement of the bulbous and the accumulation of its contents. The eccentric position of the pylorus opening due chiefly to the contraction of the muscle along the lesser curvature but may be caused also by the tone of the trunk. The proximal muscle excitation is manifested by increased peristalsis and laxity of the stomach. The relationship between this and the duodenal irritation is caused by the ulcer is clear.

The proximal spasm arises through the plexus of Auerbach in the local spasm of the set of the lesser curvature either by the same or through irritability of the muscular wall. That the pylorus, which is proximal, does not show any contracture (pylorospasm) but on the contrary stands open is plain from flow.

The contractibility of the pylorus is determined by its proximal situated hollow organ. The amount of opening of the pylorus depends upon the degree of contraction of the stomach (B. von). In duodenal ulcer the muscle function of the stomach is increased in accordance with the intestinal and the pylorus therefore opens more.

The symptoms described are not all, not only spasm of the pylorus are and most often observed in cases of chronic deep-seated ulcers. The distal inhibition is not demonstrable when the irritation of the ulcer is slight or near the constriction of the duodenum. It is in motor insufficiency of the stomach, however, little of the content reaches the bulbous. Proximal excitation is noted more frequently because alterations in the stomach are more easily demonstrated and because in many these excitation there are more marked than the distal inhibition. When this increased muscle function is not demonstrable or if the tonic condition.

Lead to depression of muscle function has already taken place (diminution of tone and peristalsis). Pressure over the stomach or duodenum may cause and the four hours fasting relax the muscle excitation (stimulation of the muscular secretion) (1) (2)

Barth, S. Chronic Duodenal Ulcer. *Ann. J. Surg.* 4

Chronic duodenal obstruction may arise from a number of causes. Some may be congenital such as strictures, ring pylorus, or duodenal stenosis by adhesions. Others may be the result of tumor growth. The most frequent cause especially in the case of the rupture or incompleteness of the muscle, pressure of the mesentery and is caused as they cross the duodenum. Attention has already been called to the local and general toxic effects produced by duodenal stenosis and its effect in the production of gastric and duodenal ulcer, cholecystitis and pancreatitis.

The symptoms are gradually in onset with acute exacerbations with epigastric pain, copious vomiting, flatulence, and epigastric distention. Absorption

tion may cause headache and dizziness, and even a mild icterus. The onset of pain is not definitely related to the taking of food and the pain is not as severe as that of gastric ulcer. The presence of bile in the vomitus is an important feature of the clinical history. The X ray is of great value in the diagnosis, but in many cases the findings of gastric retention are similar to those of pyloric obstruction. As a rule gastric analysis does not aid in the diagnosis.

The author reports seven cases. In five the condition was caused by the pressure of the mesenteric vessels on the duodenum. All showed patency of the pylorus and dilatation of the duodenum with constriction at its termination. In the fifth case there was obstruction with chronic gastric ulcer of the lesser curvature. Duodenojejunostomy or gastroenterostomy proved successful in every instance. In the sixth case the obstruction was caused by scar tissue carcinoma of the pancreas, and in the seventh by fibrous tissue of unknown origin.

The treatment is directed toward the relief of viceropexia if it is present. If there is dilatation of the duodenum operation is necessary. The procedure of choice is duodenojejunostomy, but when this is impracticable or impossible, resort must be had to gastroenterostomy. WILLIAM J. PICKETT, M.D.

Koennecke, W. and Meyer H. Clinical and Experimental Data on Chronic Duodenal Stenosis (Klinische und Experimentelle zur chronischen Duodenalstenose). *Deutsche Zeitschrift für Chirurgie* 92, 1917, 79.

Chronic duodenal stenosis is not as rare as is generally believed. The authors describe three cases, two of which were operated upon. Laparotomy showed that the cause of the disturbance was neither scar stenosis or an organic narrowing of the lumen of the bowel. By a duodenojejunostomy the symptoms were greatly alleviated. As seen by fluoroscopic examination, the stenosis is caused by movable obstruction, probably the root of the mesentery drawn over the duodenojejunal flexure. It is therefore not stenosis in the strict sense of the word, but compression. Although it is possible that the symptoms may be alleviated by gastroenterostomy, there is no basis for this operation in the treatment of duodenal compression. In such cases gastroenterostomy is unphysiological because, on account of the status of the duodenal contents and the soon-appearing alkaline reaction, there is no obstruction at the pylorus (pyloric insufficiency) and the chyme will flow through the gastroenterostomy only when these parts are filled more fully. The neutralization of the hydrochloric acid of the stomach also acts unfavorably.

The authors reject the assumption that disturbance of innervation may be responsible for status of gastric contents. They believe the cause is change of position and pressure in the abdomen, viz. a more marked bending forward of the lower thoracic and the upper lumbar portion of the spine, a de-

crease in the mesenteric fat, dilatation and sinking of the stomach or relaxation of the abdominal wall. All of these conditions lead to misplacement of the duodenum in its relation to the root of the mesentery and the flexure. To prove this theory experiments were made on dogs. The lumen was narrowed by means of fascial strips which nearly surrounded the bowel and were fixed to the curvature of the ribs. It was found that the picture of chronic duodenal stenosis can be produced experimentally by partial stenosis of the lumen of the bowel. The authors also sectioned the vagus at the cardia near the stenosis. In this experiment they noted an influence on the tone of the gastric musculature and a temporary arrest of movement.

From these facts it seems evident that the cause of chronic stenosis of the duodenum is a mechanical compression at the level of the duodenojejunal flexure, caused probably by the root of the mesentery or the superior mesenteric artery. COLLEY (Z).

Koennecke, W. Experimental Investigations Regarding Duodenal Obstruction and Atony of the Stomach (Experimentelle Untersuchungen über Duodenalstenosen und Magentonic). *Beitr. H. Chir.* 9, 1917, 698.

The author experimented on dogs with regard to the cause of duodenal obstruction and atony of the stomach and the relationship of these conditions to one another.

In five dogs the bowel was ligated and suspended from the ribs. In four dogs a bilateral subdiaphragmatic vagotomy, as done simultaneously with the duodenal fixation, and in two dogs it was done at a different time.

Stenosis and closure of the duodenum alone did not produce the picture of arterio-mesenteric obstruction causing only that of duodenal stenosis with vomiting. Closure of the duodenum with atony of the stomach is due not to mechanical factors entirely but chiefly to a disturbance of innervation such as paralysis of the vagus, irritation of the sympathetic, or a direct influence on the superficial nerves. Vomiting does not occur. The lengthening of the stomach cuts off the duodenum where it is fixed most strongly. In man, this point is the end of the duodenum, while in the experimental animals it was where the stenosed duodenum was suspended on the ribs. VON KUNZ (Z).

Jenckel and Schnepf. Peptic Ulcer of the Jejunum (Ueber Ulcus jejunum pepticum). *Deutsche Zeitschrift für Chirurgie* 92, 1917, 157.

The authors discuss the question of peptic ulcer of the jejunum arising postoperatively on the basis of seven cases which they report in detail.

In Case 1 a posterior gastroenterostomy was performed for pyloric ulcer. The patient soon became free from symptoms and gained considerably in weight. Eight months later gastric symptoms developed anew and four years later it was necessary to operate again because of jejunal ulcer. At the

second operation it was found that the pyloric ulcer was healed, but that the jejunal ulcer had caused a narrowing of the lumen of the gut. A new anastomosis between the stomach and the jejunum was therefore established on the posterior wall of the stomach. The patient again recovered, but 12 months later there were symptoms which suggested perforation of the intestine. When the abdomen was opened a perforating ulcer which had destroyed the gastro-enterostomy was found at the junction of the 10 jejunal loops. A Braun anastomosis was performed further down and a connection established between the stomach and the small intestine on the anterior gastric wall. One year later there was a renewal of symptoms with signs of peritonitis. At the site of the gastro-enterostomy a painful tumor was found. Operation as refused. A strict diet was ordered. Improvement followed with absence of symptoms for nine months. Three and half years after the last operation severe abdominal pain recurred with constipation and signs of ileus. Operation disclosed a constriction of the ascending colon of 180 degrees. A coil of small intestine lay behind and to the right of the colon and prevented spontaneous replacement. Death occurred 10 days later.

In the second case a similar course followed in which several operations were performed for gastro-enterostomy and Braun anastomosis, the lower half of the stomach was finally resected with the gastro-enterostomy opening and the contiguous small intestine the upper end of the duodenum was converted into blind as the distal loop of jejunum was carried obliquely across and united with the transverse incision in the stomach, and the lower end of the duodenum was implanted side to side in the jejunum. Today six years after the operation the patient is entirely free from symptoms.

In the third case a second operation performed 12 years after a posterior gastro-enterostomy revealed that the left of the gastro-enterostomy communication between the transverse colon and the jejunum which was round admitted the tip of the middle finger and was lined with mucosa. After separation of the parts, the opening was sutured transversely and an anterior gastro-enterostomy was performed. Three days later because of the establishment of a vicious circle Braun anastomosis was done 3 cm lower down. The patient recovered.

In Case 4 because of pyloric ulcer unilateral resection of the pylorus according to E. Schenberg method and an anterior gastro-enterostomy were done. The patient was then free from symptoms for five months, but at the end of that time because of attacks of pain indicating peptic ulcer of the jejunum an ileus resection of the jejunum with suturing and Braun anastomosis were performed. Six months later it again necessary to operate because of a new jejunal ulcer which developed in the distal loop of the jejunum. The ulcer was excised and posterior gastro-enterostomy was done the distal loop being used. Three weeks later another peptic ulcer was found at the site of the

previous resection and was excised. The patient had severe symptoms for months, recovering slowly and was discharged from the hospital after 1200 and half in poor physical condition. Full recovery did not occur.

In the fifth case the jejunal ulcer developed a year and half after posterior gastro-enterostomy and perforated at two points. The perforations were sutured and an anterior gastro-enterostomy and a Braun anastomosis as performed. Up to the present time the patient has remained well.

In the sixth case because of scar resection of the anterior wall of the duodenum as performed according to the Reckel-Poly method following an ileus. The hemorrhage the patient recovered but at second operation one month later the jejunum was found constricted below the anastomosis by the bands of adhesions. The bands were released and sutured. Intestinal hemorrhage recurred and resulted fatally in thirteen days. Autopsy showed large perforating jejunal ulcer in the posterior surface of the gastro-enterostomy which had penetrated into the pancreas and severe hemorrhagic nephritis with infection.

In the last case wide resection by Reckel method was performed in 1920 for pyloric ulcer. From one and a half to two years later hemorrhage occurred in the gastro-intestinal canal. A second operation then disclosed a peptic jejunal ulcer about the size of quarter clove at the posterior anastomosis.

Just below the anastomosis two mesenteric lymph nodes pressed against the distal loop of jejunum. These were ligated and the ulcer was sutured. Uneventful recovery followed, and up to the present time twenty one months after the operation, the patient is symptom free.

On the basis of their findings the authors believe that since the tendency of an ulcer toward spontaneous healing may be slight the management should be surgical in order to verify the diagnosis. Of the 4 cases cited the second third and fifth may be considered cured. In the second case the cure is effected by the sixth operation, wide resection and anastomosis according to Roux. In the third case by the simple release and suturing of the jejunal fistula and an anterior gastro-enterostomy in addition to the already present posterior gastro-enterostomy and in the fifth case by the anterior gastro-enterostomy with Braun anastomosis in addition to posterior gastro-enterostomy. From this it may be concluded that in selected cases a permanent cure is attainable through coarsely in mesenteric. However as the result of a conservative procedure (Cases 2-4) is still very uncertain, it seems most practical to perform wide resection with removal of all ulceration and new growth in the vicinity of the ulcer and if possible to transfer the implantation of the duodenal stump into the remaining portion of the stomach according to the Blüthli method. This procedure is usually possible if the ulcer developed after simple gastro-enterostomy.

Duiz, C. J. The Pathogenesis of Mucoconcretions. *Neuro-Colopathy (Sobre la patogenia de la neuro-colopatia mucronal)* *S p. med.* 9 3 lxx 403

The author reports the case of a 38-year old man who after secondary colangioenteritis, developed typical mucoconcretions with the general symptoms of dystonia of the sympathetic nervous system. Duiz believes the present conception of muco-membranous colitis should be discarded. Mucous colitis is distinct from vagotonic mucous colitis. The latter which is a true myoneurosis of the colon. Duiz believes may be fittingly designated as neuro colopathy or a colonic myozotriosis. It may be a primary condition or secondary to an acquired or parasympathetic vagotonia. The possibility that the sympathetic nervous system and the general condition may be radically changed by a chronic enteropathy makes the careful treatment and study of such conditions of great importance. In the author's opinion the expulsion of membranes has no other significance than the co-existence of mucus and increased fatty acids in the intestinal lumen. W. A. BRUNNAR

Lefebvre, C. The Treatment of Chronic Intestinal Stasis by Carcogastromodostomy (Du traitement chirurgical de la stase intestinale chronique par la carcogastromodostomie) *Presse med.* Par 9 3 lxxv, 75

The operation for chronic intestinal stasis should be based on the normal function of the intestine. In the author's opinion, carcogastromodostomy best meets the requirements. As there is no obstruction in the intestinal lumen, the object of an anastomosis is to establish drainage of the supercharged colon. Carcogastromodostomy drains the right colon and preserves the function of the ileocecal valve and proximal colon. W. A. BRUNNAR

Stone, H. B. The Surgical Treatment of Chronic Ulcerative Colitis. *J. Surg.* 9 3 lxxvi, 493

When chronic ulcerative colitis is recurrent, becoming severe and resisting medical management, surgical measures may be considered. Of these proctostomy, a semipermanent opening for irrigation of the bowel below, was formerly a favored method but failed to cut out the colon as an exit for feces and irritants. Carcotomy was found to be little better. To secure complete physiological rest of the colon the logical procedure is complete ileostomy. After any one of these operations a patient who previously passed from fifteen to twenty bloody stools daily will be constipated for one or three days. This is due to the postoperative paresis, and in cases in which appendicostomy has been performed there is usually recurrence. Ileostomy requires more tedious after care but entirely excludes the colon and gives better results than the other operations.

In performing ileostomy the author divides the ileum with the cautery between two permanent sutures. The two blind ends are then anastomosed against each other and circular end-to-end suture

of the bowel is done with interrupted mattress sutures of fine silk. This leaves the ileum closed by a double diaphragm. The loop of ileum just above the ileocecal valve is selected for this purpose. The gut about an inch proximal to the closure is brought up and fastened in the wound, to be opened some hours later for the introduction of tube. In this manner the ileostomy is established and the colon excluded. The appendix is then brought up through separate incision and used as an opening to irrigate the colon. Ultimately the double diaphragm is perforated by a knife introduced downward from the ileostomy opening and the ileostomy is closed. The artificial opening is kept open until all evidence of colitis has disappeared. H. W. FINE, M.D.

Mandl, F., and Gara, M. An Experimental Study on the Suture of Non-Peritonized Sections of Intestine Following Resection (Experimentelles zur Naht nicht peritonealisierter Darmabschnitte nach Resektionen) *Zentralbl. f. Chir.* 9 3 lxx, 355

The difficulties of producing permanent union between non-peritonized and peritonized sections of intestine are met chiefly in the lower portion of the esophagus, the lower portion of the duodenum, and the sigmoid. On the basis of extensive experiments on rabbits, the authors dissect a cylinder of serosa or a flap of serosa from the portion of gut supplied with peritoneum, excise the muscularis mucosae lying under that portion, and after accurately suturing the mucosa, cover this area with the cylinder of serosa. Of importance for successful results is suture of the mucosa so that the cylinder of serosa, which must not be longer than 1 or 2 cm, does not come into contact with the intestinal contents. KATA (Z)

Bercsler, L., and Kallard, Z. The Spontaneous Formation of Anastomoses of the Intestine (Ueber spontane Anastomosenbildung des Darms) *Wien. klin. Wochenschr.* 9 3 lxxv, 606

During experimental research on the utilization of starch preparations taken by mouth, the authors occluded the intestine by means of a silk ligature placed in the lowest part of the rectum. In white rats of medium size the gut was passable again after four or five days, but not in mice. The authors regard this fact as proof that spontaneous repair does not occur in the same manner in all species of animals. HORRIGER (Z)

Armstrong, A. Pulmonary Tuberculosis and Appendicitis. *American M. J.* 9 3, lxxv, 446

Tuberculosis of the vermiform appendix is more common than was formerly supposed but is often overlooked. The possible association of appendicitis with pulmonary tuberculosis is not sufficiently emphasized in the surgical literature. During a period of two years 25 per cent of the author's patients in private sanatoria were subjected to appendectomy. What found the percentage of tuberculous appendicitis in the records of the Philipps

institute it be as high as 50. All of these patients died of advanced tuberculosis.

The percentage of tuberculous appendices removed at operation as reported in the literature varies. Deaver gives it as 0 per cent. Murphy as 1 per cent. Henson, as from 1 to 2 per cent. Lockwood, as 2 per cent. Fitz, 13 per cent. and Mayo, as 5 per cent. King found a tuberculous appendix in 25 per cent of twenty-eight cases.

He fully reported a case of primary tuberculous appendix and mentioned five others from the literature.

Persons operated upon for appendicitis frequently develop pulmonary tuberculosis, the focus of infection having been present in the lungs at the time of operation. Hence, except in an emergency, such as fulminating peritonitis, careful preliminary history and physical examination should be made by one accustomed to examine and treat pulmonary tuberculosis.

The author endorses the removal of the diseased appendix. His conclusions with regard to the tuberculous appendix are summarized as follows:

1. Appendicitis is often tuberculous. While it may be primary it is usually secondary to a focus in the lungs, either active or dormant. Rarely it is secondary to a lesion in the intestines.

2. Appendicitis is often followed by ill health which culminates in active pulmonary disease.

3. A careful history and physical examination with the X-ray if possible should be made of all cases about to be operated upon, to discover whether an active or latent lesion is present.

4. Local anesthesia should be used, with gas oxygen as a second choice. Either is to be condemned for these cases.

5. The convalescence should be prolonged to avoid subsequent activation of any lung lesion present.

WALTER C. DICKERT, M.D.

Kuttner, L. Practical Advice with Regard to the Diagnosis and Treatment of Diseases of the Digestive Tract. The Cause of the Pains Frequently Persisting After Appendectomy (Praktische Ratschläge über die Diagnose und Behandlung der Verdauungsstörungen. Was sind nach Appendektomie oft erscheinende Beschwerden? Deutsche med. Wochenschr. 9, 2, 213, 214, 215).

Abdominal pain occurring after appendectomy may be caused by adhesions. These must be expected soonest in cases in which the inflammation was not confined to the appendix alone and particularly those in which primary closure of the operative wound was impossible. Such adhesions may cause acute intestinal obstruction with and without irrigation, incarceration, or chronic intestinal stricture. In doubtful cases, X-ray examination with the use of opaque meals and enemata is necessary.

Frequently, however, it is not adhesions which cause the complaints but functional or an inflammatory catarrhal process producing alternating constipation and diarrhea. As a rule these symp-

toms were present previous to the operation, the appendicitis being only part of a diffuse intestinal disease.

More frequently gastric or duodenal ulcer is the cause of continuous or intermittent pain after appendectomy. Disease of the bile passages, especially gall stone disease, is another cause. In the female diseases of the adnexa must be considered. Diseases of the urinary tract, especially pyelitis, may give rise to symptoms after operation. Disease of any abdominal organ may be responsible. If organic disease can be excluded, a disturbance of the nervous system may be the cause. GILLEY (2).

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Marguarachi, O. Non-Parasitic Cysts of the Liver Especially Solitary Neoplastic Cysts. Unilocular Cystadenomas (Sole cyst non parasitario del fegato con particolare riguardo alle cisti neoplastiche solitarie cistadenomi uniloculari). *Pat. di Roma* 9, 1, 231, 232, 233, 234, 235, 236.

Non parasitic cysts of the liver are rare. Marguarachi reports two cases. In the first there was a solitary cyst of the right lobe from which more than 8 liters of fluid were drained. Following this evacuation the cyst was marsupialized as it was found impossible to extirpate it. In the second case there were multiple cysts in the lobe of the liver. These were punctured but it was impossible to remove the mass. The patient's condition gradually became worse and he died about three months later.

Marguarachi gives short histories of fifty cases of solitary cyst of the liver of neoplastic origin which he collected from the literature. With regard to the pathogenesis, it is generally agreed that these cysts are neoplasms due to proliferation of the liver epithelium of the bile duct.

Marguarachi enters into very detailed discussion of the anatomopathology, etiology, symptoms, etc., and includes in his article several photomicrographs of the cyst walls. W. A. BRYAN.

Hartmann-Keppel, G. L. Ascariidiasis of the Liver and the Bile Ducts (L. ascariidiasis del fegato e dei suoi dotti). *J. de chir.* 9, 2, 221, 22.

The author reports two cases. The first was that of a 44-year-old man whose symptoms led to diagnosis of liver cancer close to the skin. Two lumbrocoid worms, 9 and 24 cm. long, were found in the part of the cancer in the left lobe of the liver.

The second case was that of a girl 2 years old who was subject to epileptiform convulsions and attacks of pain in the region of the liver. The history indicated intestinal ascariidiasis. A diagnosis of cancer of the left lobe of the liver was made. At operation hepatic cancer containing a dead ascaris 3 cm. long was found.

Ascari larvae may develop and remain in the intestine or may reach the liver by the portal vein.

and develop in the glandular parenchyma, or may reach the liver by the bile ducts and develop in the gland itself or become arrested in one of the ducts.

The author treats at length of the pathological anatomy, symptoms, and diagnosis of the affections of the liver and bile ducts which may be caused by the ascari.

Although I amebic abscess cures not only overcomes the initial congestion but according to certain authors, may cause the resorption of even large collections of pus rendering operative evacuation unnecessary there is nothing to show that vermicifuges may act in the same way. Nevertheless the early administration of a vermifuge is the best method of preventing complications.

W. A. BARNES

Mayer, L., and Koenigs, J. The End Results of Omentopexy in Cirrhosis of the Liver (*Résultats Étiologiques de l'omentopexie dans les cirrhoses du foie*) *Brussels-méd.* 1913, 22, 50

I. 1904 Montproff collected 24 cases of hepatic cirrhosis treated surgically. The results in eleven are unknown. In the 3 others there were seven operative deaths, nine deaths from shock, and twenty six deaths from other causes. Total mortality of 18 per cent. Improvement in the technique and the use of local anesthesia have greatly reduced this high mortality.

In the authors opinion, Talma omentopexy is safe procedure the mortality being due, not to the operation but to progress of the condition for which it was performed. In this article three cases are reported. The first patient, who was operated upon in 1903 for biliary cirrhosis, is still in perfect health and able to perform heavy work. The second, who was an alcoholic, has remained cured for eight years. The third, who was operated upon in 1903 for three and one half years ago for hepatic cirrhosis with considerable ascites is also well.

According to Montproff statistics, the percent age of definite recovery from omentopexy in cirrhosis was 50 per cent. This included cases which could not be treated with the knife. Taking into account the improvement in technique, the authors estimate the chance of recovery at 75 per cent, especially if the patients are sent to the surgeon in good general condition.

W. A. BARNES

Brown, W. Surgical Interference in Acute and Subacute Atrophy of the Liver (*Chirurgische Eingriffe bei akuter und subakuter Leberatrophie*) *Alten Wochenschr.* 1913, 2, 5

Since the World War acute and subacute atrophy of the liver has become far more prevalent at an earlier age. The most severe cases are not seen by the surgeon but, on the other hand, the less stormy forms come to operation sooner or later because of the impossibility of making a differential diagnosis between obstruction of the common duct and ascending cholangitis. The author has operated upon five such cases of atrophy of the liver. In two

there was a combination of calculous cholangitis and acute atrophy of the liver.

Case 1. The patient gave a history of ten attacks of gall-stones. The illness for which the author was consulted began four weeks previously. Icterus had been present for two weeks. A stone-filled gall bladder was removed. The bile ducts were found free from stones. There was no drainage of the hepatic duct. Death occurred the following day. Autopsy showed severe acute atrophy of the liver.

Case 2. At cholecystotomy two stones were removed. The walls of the common duct were soft and not distended. The surface of the liver was somewhat hardened. There was no further appearance of bile in the passages. Death occurred after five days with evidences of choleraemia. Autopsy showed central necrosis of the liver lobules.

Case 3. The patient was an unmarried woman of 33 years who had been ill for twelve weeks, and for nine weeks had had icterus with fever and chills and clay-colored stools. At operation the gall bladder was found only slightly changed. The choledochus was not distended. Operation consisted of cholecystectomy and drainage of the choledochus. Macroscopic examination of a small piece of the liver showed acute atrophy. The flow of bile was well re-established and the patient recovered.

Case 4. The patient was a man 30 years old who had been ill for fifteen days and had had icterus for four days. At operation the gall bladder was found greatly distended but there were no stones. Cholecystectomy was done with choledochus drainage. The bile passages were normal. Histologic examination of a piece of liver showed broken down and defective liver cells with small-cell infiltration. There was an active flow of bile. Complete recovery resulted.

Case 5. The patient was a girl 18 years old who had fatal corpus luteum hemorrhage with atrophy of the liver.

The author raises the question whether in such cases it is better to confine oneself to an exploratory laparotomy or to drain the bile passages. From his own experience it appears that drainage may exert direct healing effect upon the parenchymatous disease of the liver as it removes the stagnating bile and the toxic degeneration products of the liver cells. Drainage of the passages is indicated also in unfavorably progressing cases of atrophy of the liver.

WOLFFENBUTER (22)

Flint, E. R. Abnormalities of the Right Hepatic, Cystic, and Gastro-duodenal Arteries, and of the Bile Ducts. *Brd J Surg.* 1913, 2, 509

This article is based on 200 post-mortem dissections. In the author's opinion, anomalies of the hepatic and cystic vessels and the bile ducts are more frequent than is generally believed. In twenty-five cases the right hepatic artery was found to pass in front of the hepatic duct. In forty-two, it arose

from the superior mesenteric artery and in a few cases there were two vessels, one from the hepatic trunk and one from the superior mesenteric. In a few older persons it was found tortuous and displaced to the right.

Anomalies of the cystic artery are less common. Thus, it has been found to arise from the left hepatic and gastro-duodenal arteries and to pass in front of the common hepatic duct. Of more importance is the finding of accessory cystic arteries arising from the right hepatic, gastro-duodenal or superior pancreaticoduodenal arteries. This may be seen passing along the course of the common duct and its presence may account for the occurrence of severe and unexpected hemorrhage when the duct is opened.

Anomalies of the duct consisted of low junction of the cystic and hepatic duct. In a few cases these met in the portion of the common duct which lies within the duodenum. The cystic duct may be found very tortuous, so that it may meet the common duct from the front or the left instead of from the right. In several cases an accessory right hepatic duct was found. In the majority thus arose at the extreme right of the portal fissure and joined the extra-hepatic ducts between the junction of the left and right hepatic duct and the point where the cystic enters the common duct. In one specimen it entered the cystic duct.

Avoid from the dangers of hemorrhage from accessory or displaced cystic vessels during operation the duct themselves require careful cauterization. Abnormal positions of the duct favor injury to the common or hepatic duct during cholecystectomy. In cases of an accessory right hepatic duct there is danger of leaving the duct untied, this resulting in leakage of bile after operation. The author cites several high deaths occurred from general peritonitis after operation on the upper revised the abdominal part. It is filled with bile the ligature on the cystic duct was intact but an accessory hepatic duct was discharging bile. He believes this state of affairs is present in many cases which drain after cholecystectomy. It favors drainage after cholecystectomy and calls attention to the dangers of clamping and cutting structures en masse without making careful dissection and exposure.

WILLIAM J. PICKETT, M.D.

Petermann, M. G. Cholecystitis and Its Complications. *Surg. Gynec. & Obst.* 9:3, 1910, 3.

From the thorough review of the literature on experimental cholecystitis which is given in this article the following conclusions are derived.

The intravenous injection of organisms in sufficient numbers is always followed by the appearance of the organisms in the bile. They are probably carried to the liver in the blood stream, excreted in the bile and borne by this medium into the gall bladder. At the same time they may be carried into the wall of the gall bladder by the blood stream and lymphatics.

2. The intravenous injection of virulent organisms in sufficient numbers produces a cholecystitis in a high percentage of cases.

3. The organism may be demonstrated in the bile one half to 10 minutes after intravenous injection, and may be found in the gall bladder after the blood has become sterile.

4. The simple injection of even large numbers of organisms into the lumen of a normal gall bladder does not usually produce cholecystitis.

5. The injection of virulent organisms into the lumen of a gall bladder in sufficient numbers after ligation of the cystic duct and vessels regularly produces a cholecystitis.

6. Although cholecystitis may be due to hematogenous infection it is not infrequently lymphogenous in origin.

Cholecystitis is usually accompanied by hepatitis. The character of the lesion in the liver is determined to a certain extent by the organ and course of the disease in the gall bladder.

On the basis of the foregoing conclusions the following problems were investigated: (1) the passage of organisms into the bile of the gall bladder after injections into the portal and systemic veins, as influenced by ligation of the cystic duct and vessels; (2) the occurrence of organisms within the wall of the gall bladder at a distance from the mucous membrane after portal vein injection, their descent in the bile having been prevented by ligation of the cystic duct and vessels; and (3) a study of the complications of cholecystitis produced experimentally.

A extensive series of experiments on dogs and rabbits and clinical study of 30 patients with disease of the gall bladder are reported. The following conclusions were drawn from this work.

A) experimental method in which virulent organisms are carried through the blood stream directly to the gall bladder followed, in the majority of cases, by the development of a cholecystitis. The importance of the lymphatic route in the pathogenesis not only of cholecystitis but also of its complications, such as pancreatitis, hepatitis, and inflammation of the common duct is emphasized. It is possible that in the majority of cases the cholecystitis is produced secondarily to hepatitis by lymphatic extension.

Palmer, D. W. and M. Klein, G. F. Gall-Stones Associated with Kidney Stones. *Connect. T. M.* 1.

The authors report the case of a woman, aged 41, who had suffered the attack of pain in the left side for three or four years. This pain, as often as necessary, required the administration of morphine to relieve it constantly. The pain came on at night and as of aching and boring nature. It began in the renal region and radiated down and toward the bladder. At times it was relieved by the drinking of large amount of hot water. Ten to 15 years ago the patient had passed gravel and blood in the urine.

Food intake did not appear to influence the pain although occasionally there was more or less gas which caused bloating and belching. Complaint was made of some distress in the region of the liver but there was no severe pain on the right side and no jaundice. Chronic constipation had been present for years. The patient's maximum weight was 5 lbs. At the time of examination it was 95 lbs.

Physical examination revealed some tenderness in the gall bladder region and considerable tenderness and muscular rigidity in the left renal area. Urinal examination disclosed a trace of albumin, no cast and few red cells. A ray examination showed two opaque shadows immediately to the right of the intervertebral discs between the first and second lumbar vertebrae and a fairly large irregular opaque shadow on the left side about 3 1/2 in. in from the side of the third lumbar vertebra. A diagnosis of stone in the left kidney and probable gall stones was made.

In pyelograms the right renal pelvis appeared normal but the right ureter, as kinked at the level of the sacrospinous joint and the kidney was so immediately below the right kidney were two opacities high, from their position suggested gall stones. The opacity in the left kidney was apparently stone in the pelvis.

A stone was removed from the pelvis of the left kidney by pyelolithotomy, and cholecystectomy was done ten days later. The gall bladder also contained stones.

This case is of interest because of the extraordinary of the pathological combination, the absence of infection in the urological tract and the absence of symptoms in the diseased right kidney.

C. F. ARNOLD, M.D.

Abell, I. Papilloma and Adenoma of the Gall Bladder. *J. Surg.* 9:3 1914, 76.

Benign tumors of the gall bladder, notably papilloma and adenoma, are not so rare as was formerly believed. Such tumors were found once in every twenty-three and one-half cases of cholecystectomy in the May series and once in every thirty-six cases in the author's series. Papilloma occurs usually in mucosa which is the site of chronic irritation. In the gall bladder both papilloma and adenoma occur without stone formation. The clinical syndrome is that of chronic cholecystitis plus tumor.

Of 283 gall bladders subjected to routine microscopic examination eight presented benign tumors, five adenoma and three papillary adenoma. In seven of the cases gall stones were present. The author reports a case in which the growth removed at the first operation was believed to be malignant. Three years later the patient was again operated upon for obstruction in the common duct. At this time the gall bladder had disappeared and the common duct was greatly distended by tumor tissue which proved to be non-malignant papillary adenoma.

H. W. FEE, M.D.

Brocq, P., and Binet, L. The Pathogenesis of Hemorrhagic Pancreatitis (Pathogénie de la pancréatite hémorragique). *Presse méd. Par.* 19:3 1911, 9.

In experiments on dogs the authors found that simple ligation of the principal pancreatic duct is not sufficient to cause hemorrhagic pancreatitis, but that if the ligation is supplemented by the intracanalicular injection of certain fluids, hemorrhagic pancreatitis develops in from twenty-four to forty-eight hours. Solutions of soda, formaline, chloride of zinc, bile, and intestinal juice will produce this result. The authors have studied also the effect of bacteria, toxins, and leucocytes exerted directly or through a change in the reaction of the bile and intestinal fluids.

The experiments showed conclusively that both bile and intestinal secretions increase the activity of pancreatic secretion. Bile is known to act on lipase, one of the pancreatic ferments, causing the splitting of fats and setting up steato-necrosis. Here intestinal juice enterokinase acts directly upon the pancreatic ferment trypsin. One of the conditions essential for the production of hemorrhagic pancreatitis is the activation of the pancreatic ferments by an exogenous factor. The authors show that this factor is usually the bile or intestinal secretion. The mechanism is as follows:

Primary lesions are necessary viz a hematoma and steato-necrosis. Trypsin activated by the exogenous factor in the interior of the pancreatic canals high, unlike the intestine are not adapted to such activation, digests the walls of the canals and injures the vessels, causing hemorrhage and necrosis of the pancreas. The steato-necrosis is the result of the splitting of fats by lipase (activated probably by bile) with the formation of soaps.

Clinically it has been frequently demonstrated that there is usually reflux of bile due to pressure in the biliary ducts or spasm of the sphincter of Oddi, or that intestinal juices reach the pancreas because of duodenal stasis due to mesenteric cord, vomiting, or intestinal spasm.

In the surgical treatment removal of the hematoma and the necrotic strips of pancreas must be supplemented by an operation to discover and remove the primary cause. A careful exploration of the bile ducts, stomach, duodenum and jejunum is necessary.

W. A. BRIDGEMAN.

Berling, G. An Address on Pancreatitis and Its Association with Cholecystitis and Gall-Stones. *Bull. N.Y.* 9:3 1913, 705.

Berling briefly reviews the anatomy of the gall bladder, bile ducts, and pancreas, emphasizing the fact that the lower portion of the choledochus and the ampulla are commonly surrounded by the head of the pancreas. He believes that in most cases of pancreatitis the dominating factor is infection primary in the biliary passages. If, when the parts are removed at autopsy, the ends of the duodenum are ligatured and the bowel is filled with colored fluid, it

is impossible to squeeze fluid into the duct by forcible compression. It is true however that the injection of sterile bile or other fluids into the pancreatic ducts may cause pancreatitis. Opinions as to the importance of gall calculi in the ampulla of Vater may give rise to controversy by shunting the bile flow into the pancreatic duct is not borne out by the author's experience because in four cases in which a stone was removed from the ampulla there was no evidence of pancreatitis at any time.

It would appear that infection plays the chief rôle whether it arises in the gall bladder and descends along the bile duct or according to the newer view is lymphatic in origin. As bearing on the induction of acute pancreatitis two cases are cited in which round worms had entered the pancreatic duct from the duodenum and caused acute hemorrhagic pancreatitis by completely plugging the duct. In these cases infection associated with stasis of pancreatic secretion occasioned the clinical picture of the disease. Infection of the biliary passages began in the gall bladder and may be exerted through the liver. It is most obvious even when the common duct is drained and the gall bladder removed.

Acute pancreatitis is a surgical emergency attended with rather high mortality. This disease should be borne in mind whenever an obese patient with history suggestive of gall stones is suddenly seized with severe epigastric pain associated with shock, subnormal temperature, vomiting, great prostration, tenderness in the mid-epigastrium, pain referred to the back and dorsal spine, rapid pulse and occasionally cyanosis, glycosuria, leucocytosis. The diagnostic index of the urine (Loew test) is the one set is usually high and the author regrets this test of considerable help. As the risk of Langerhans' islets to escape destruction, the outlook for patients recovering from acute pancreatitis is usually good even though a large portion of the pancreas may be destroyed. The author cites one case caused by calculus in the duct of Wirsung. All of the glandular tissue of the pancreas is destroyed and ultimately replaced by fat and eventually carcinoma developed in the organ. The site of irritation from the stone. The risk of Langerhans' islets destruction and on only one occasion there was transient glycosuria.

In 11 of the cases of subacute pancreatitis seen by the author gall stones were present. The majority of these patients are more seriously ill than those suffering from gall stone colic alone. It is not entirely different between infectious pancreatitis and stone in the common duct. It occurs less frequently in every case. The majority of some frothy chocolate brown fluid with curious glistening sheen was found in the peritoneal cavity. The treatment consisted in drainage of the common duct with or without cholecystectomy. The pancreas was not resected in any case.

In the author's cases of chronic pancreatitis the condition was usually limited to the head of the pan-

creas, especially the zone surrounding the choledochum. Here again the disease was associated with calculi in the gall bladder and common duct. The clinical picture is difficult to differentiate from that of carcinoma of the head of the pancreas. The author emphasizes the importance of remembering the possibility of the presence of calculi in the pancreatic duct in cases presenting a palpable swelling of the head of the gland.

Barling is convinced of the great value of recording surgical errors. In the case of a 60-year-old patient deeply jaundiced and with a distended gall bladder and a palpable pancreas, the diagnosis of carcinoma of the pancreas was made. On account of the history of attack of colic, pain, exploratory laparotomy was decided. At the operation the gall bladder was found distended and the duct and gall bladder were free from calculi but a massive nodular swelling was discovered in the head of the pancreas. This was regarded as almost certainly malignant. The patient died. At autopsy small calculi were found coming from the ampulla in the center of the pancreas. The author believes that an exploratory incision of the head of the pancreas would have revealed the presence of the stone but great respect should be entertained for the possibility of the subsequent escape of pancreatic secretion and the danger of the occurrence of hemorrhage from the pancreaticoduodenal arteries.

In conclusion Barling states that in acute catarrhal jaundice in young persons the liver is probably due directly to the inflammation and swelling of the head of the pancreas compressing the choledochus.

JOHN M. NIXON, M.D.

Wassergla, A. C. The Pathophysiology of the Spleen. *J. Amer. Med. Ass.*, 9: 3, 1914, 8.

The author attempts to answer the following three questions:

1. Does the spleen belong to the group of endocrine glands producing an internal secretion?

Under certain conditions as the spleen the primary cause of certain diseases such as splenic anemia.

2. Is the spleen a true immunizing organ? The many important investigations of the internal secretion of the spleen have not yet been completed. It solved the problem.

The relation of the spleen to the various diseases in which this organ is prominent clinical feature that of pernicious anemia. The fact that some cases of hemolytic jaundice removal of the spleen followed by cure may be explained by the supposition that the spleen elaborates some hormone which acts upon the hematopoietic activity of the bone marrow or develops lymph which destroys the red cells.

The clinical and anatomic-pathologic observations and experimentation show that in several diseases caused by protozoa (malaria, trypanosomiasis, syphilis of the blood) the spleen has a very little immunizing power.

MORRIS H. KARR, M.D.

Neumann, P.: *Psychic Disturbances After Splenectomy in Cases of Pernicious Anemia* (Psychische Störungen nach Splenektomie bei Anämia perniciosa.) *Arch. Psychiatr.* 9, 1, 249.

Case 1. The patient was a 42-year-old woman. The erythrocyte count was 56,000. The day after splenectomy the blood examination showed 90,000 erythrocytes, 20,000 leucocytes, and 20 per cent hemoglobin. The subsequent course was characterized by increasing irritability, vomiting, refusal of food, and an anxious expression. In spite of continued improvement in the blood picture (after three weeks the erythrocytes numbered 3,760,000 and the hemoglobin equalled 41 per cent) the disorientation as to time and place became worse, and on the fifty-first day after splenectomy the patient died in profound stupor.

Case 2. The patient was a man 48 years of age. The blood examination showed erythrocytes, 1,380,000; leucocytes, 7,700; and hemoglobin, 41 per cent. The day after splenectomy (Rumpel) the erythrocytes numbered 3,900,000; the leucocytes numbered 3,000; the hemoglobin equalled 45 per cent, and the patient was in peculiar stuporous condition with hallucinations from time to time. In the course of a week the symptoms receded, the erythrocytes decreased to 3,000,000, and the hemoglobin decreased to 30 per cent.

The author is of the opinion that the psychoses were due to the loss of the spleen. As the formation of antitoxins by the spleen ceases and the toxins circulate in the blood in increased amounts (the more erythrocytes also are no longer destroyed) brain intoxication results. In the first case the liver failed to take over the function of the spleen, and in the second it assumed this function.

WOLFFENBUTER (Z)

MISCELLANEOUS

Hodges, F. M.: *Subdiaphragmatic Abscesses.* *J. Am. Med. Ass.* 9, 2, 122, 123.

In the author's series there were nine cases. The abscess was on the right side in seven and on the left in two. In three cases the abscess followed an appendectomy. A gunshot wound, a perinephritic abscess, resection of the cecum for carcinoma, perforated duodenal ulcer, perforated gastric ulcer, and multiple liver abscesses were the preceding factors in one case each. Four of the patients recovered, four died, and one is still under observation.

In only one case was definite diagnosis made prior to the roentgen ray examination. The evidence furnished by the roentgen ray is due almost entirely to changes in the position and contour of the diaphragm, unless, in addition, there is a change of contour there is an air pocket or collection of gas beneath the diaphragm. The diaphragm is most often elevated, but is lower in the cases of extraperitoneal abscess than the others. Its dome is accentuated, and its excursions are limited. In seven of the author's

cases emphysema was either suspected or diagnosed prior to the use of the roentgen rays. Prominuous needling is probably never justified until every other method of diagnosis has been exhausted. The author reports two cases briefly. His conclusions are follow:

1. The occurrence of subdiaphragmatic abscess is still sufficiently frequent, especially in post-operative cases, to be of marked clinical importance.

Early treatment usually leads to cure while late diagnosis means serious complications or death.

3. A history of recent abdominal operation, infection followed by an unexplained increase in the pulse rate and the temperature makes necessary a careful elimination of subdiaphragmatic abscess.

4. The roentgen ray is a very important diagnostic aid, and will almost invariably give definite information.

5. In any acute infection in the upper abdomen an elevated and rigid diaphragm should suggest a subdiaphragmatic abscess.

6. A diaphragm which is normal in position, contour and motility usually eliminates the possibility of an abscess just beneath.

7. Prominuous needling is never indicated as in this way the pleural cavity may be infected.

E. C. ROSSIGNOL, M.D.

Hutchinson, R.: *The Chronic Abdomen.* *Brit. Med. J.* 9, 3, 1, 667.

Chronic abdomen is usually found in unmarried or childless married women of the comfortable classes.

The symptoms are variable, usually including constipation, flatulence, a feeling of general weakness, and exhaustion. The history is one of repeated operations and visits to various cures, noted in most minute detail.

The findings consist of visceropeliosis, mucous membranes colitis, and morbid psychological state.

The most important point in the treatment is to catch the patient before she starts on the rounds of surgery. Then comes the fattening cure, followed by efficient abdominal support and attention to the bowels. The morbid mental state is best cured for by something which will occupy the mind.

WILLIAM E. SHACKLETON, M.D.

Nather, K.: *The Preperitoneal or Retroperitoneal Route to the Subphrenic Abscess as the Typical Operation* (Der prä- oder retroperitoneale Weg zum subphrenischen Abscess als typische Operation.) *Arch. f. Klin. Chir.* 922, 1220, 24.

The author first gives a detailed description of the subphrenic region. Peritoneal folds divide this region into several parts. On the basis of anatomical specimens Nather distinguishes a right upper anterior and posterior, a right lower and left upper and lower anterior and posterior part. In the majority of cases pus will be found in more than one of these spaces.

Author describes the pathologic anatomy of the various abscesses in detail. He includes among subphrenic abscesses those peritoneal collections often described as retroperitoneal phlegmons. As sites of origin of subphrenic abscesses he is considered first the appendix, then the stomach and duodenum, then the liver and bile ducts, and more rarely the pancreas, kidneys, and other abdominal organs. For some kinds of subphrenic abscesses the triangular figure of Dallas as described by Barnard is characteristic.

With regard to the operative treatment the author states that it is generally agreed that abscesses pointing toward the abdominal cavity should be opened from this cavity. Abscesses growing toward the thorax are often opened transpleurally, but almost always these abscesses also by the peritoneal or retroperitoneal routes. A 6-cm incision parallel with the costal margin is made below the peritoneum in front the finger inserted, the abscess through the diaphragm, retroperitoneally, and at this point the peritoneum is opened. The retroperitoneal approach incision is made on the twelfth rib about the spinal process, the twelfth rib is resected, the muscles are freed from the renal fascia, blunt hooks are inserted upward to protect the pleural grip, the abscess is approached by blunt dissection of the subphrenic space, then punctured.

If normal peritoneum is encountered as either of these routes an abscess can be excluded, the certain.

ROSE (7)

Andrews, C. F. Primary Retroperitoneal Sarcoma. A Report of Twenty Eight Cases. *J. Surg. Gynec. Obst.* 9:3 131450

Primary retroperitoneal sarcoma originates behind the peritoneum in the areolar or adipose tissue of lymph glands, and occasionally in the vertebral. Their origin is independent of any organ such as the kidneys or adrenal. They are therefore distinguished from secondary retroperitoneal sarcomata which usually originate in the testicle or ovary.

The literature reviewed by the author contains the report of 69 cases. Of these Andrews adds thirty-four cases observed at the M. Clinic. In all, a total of 103 proved cases. The largest tumor on record weighed 34 lbs. and removed by Bull.

The ages of the patients in the 31 (cases series ranged from 5 to 6 years. There are twenty-three males and five females. In only one case are multiple tumors found. The growths appear with almost equal frequency on both sides of the abdomen.

The symptoms are insidious in onset, indolent abdominal pains, which at times are colic like, nausea, vomiting and gaseous distention. Pain in

the lumbar region and leg is a common complaint. Half of the patients had normal bowel movements, 7 per cent had diarrhea and 8 per cent had constipation. One had intermittent attacks of diarrhea and constipation. If anemia is present, it usually begins at the ankle and extends upward. Occasional all there is urinary frequency, dysuria, or hematuria. Indigestion may be caused by pressure on the common duct. Loss of weight and strength are very constant findings. There is slight fever at times, and moderate secondary anemia. The average duration of symptoms until the time of examination was eight months.

The roentgen ray aids in the diagnosis by roentgen gastro-intestinal masses and in conjunction with the cystoscope in eliminating benign urinary tumors. The sarcoma is usually deeply placed, may be mobile or immobile, firm or cystic, smooth or irregular, tender to the touch or painless. The most characteristic finding is the location of the colon, which rest in a groove on the anterior surface of the tumor. The differential diagnosis may be extremely difficult if not impossible.

Metastases occurred in 33 per cent of the cases being most common in the liver, lungs and hips, kidneys, but found also in the spleen, kidneys, skin, osseous, muscle, pleura, heart, bone, spinal cord, dura, adrenals, and mesenteries.

The most common type of sarcoma is the small round-cell or lymphosarcoma. This also is the most malignant. Other types are the spindle cell, fibrosarcoma, in cell, fibrosarcoma, myxosarcoma, myxochondrosarcoma, and giant-cell sarcoma. Such tumors may become cystic because of hemorrhagic, mucoid, or purulent degeneration.

The result of treatment of retroperitoneal sarcoma has been most unsatisfactory. Potassium iodide has been given internally but without results. In some cases (Coley) serum seem to be palliative. Surgery has been the treatment of choice for years but is too often a forlorn hope. If cut off early, seven to more are inoperable, seven are removed completely possible, but in 16 cases the tumor recurred, and one patient died the day after the operation.

The combination of roentgen ray and radium or x-ray gives excellent results. Several patients are now undergoing this treatment at the Clinic. In some cases the mass has entirely disappeared and the patient has gained weight and strength and is able to carry on his work. It is too early to claim permanent cure, but even if this great improvement is only temporary, it is still of great value.

While the procedure seems to achieve more than any previous method of treatment. It is also of diagnostic value. A sarcoma will shrink rapidly in the course of treatment while if the mass is not sarcoma, no change has been observed.

GYNECOLOGY

UTERUS

Petersen, A. J. Mixed Tumors of the Uterus. *J. Lab. & Clin. Med.* 9:3 viii 369

Mixed tumors of the uterus contain a variety of mesoblastic tissues such as smooth and striated muscle, fibrous connective tissue, fat, bone, cartilage, endothelial tissue and certain undifferentiated tissues derived from the mesoderm. Wilms monograph published in 1900 contains review of the mixed tumors of the uterus reported in the literature up to that time and explains their origin by displacement of embryonic mesoblastic tissue nests along the course of the Wolffian duct.

Since Wilms monograph many other mixed tumors of the uterus have been reported. A summary of fifty of these demonstrates that twenty-seven occurred in the fundus of the uterus and the others in the cervix. Thirty-two contained cartilage, four bone, fourteen smooth muscle, eighteen striated muscle, five fat, two endothelium, three, carcinoma and almost all sarcoma tissue.

Probably the most characteristic feature of these tumors is their histologic structure, that is, their content in variety of mesoblastic tissues. Almost all of the mixed tumors reported are regarded as malignant although benign tumors are recorded (Perlman). The malignancy is manifested by a local recurrence after removal rather than by the appearance of remote metastases. The metastases, while frequent and late, usually do not contain heterogeneous tissues and occasionally contain tissues not found in the primary tumor. Twenty-eight per cent of the report of mixed tumors reviewed mention metastases, most of which were confined to the abdomen and pelvis. Tumors of the fundus seem to infiltrate the pelvic tissues later than those of the cervix. Mixed tumors of the uterus have been reported for ages ranging from 1 year to 75 years but 50 per cent have occurred in women over 50 years of age. Uterine cytology seems to have no relationship as mixed tumors have been found in atrophic women as often as in multiparous women. (Likewise they are not easily differentiated from other malignant tumors of the uterus.)

The diagnosis depends finally upon the histologic examination of the tumor tissue although the presence of cartilage or other characteristic tissue in masses large enough for recognition on macroscopic examination permits a tentative diagnosis at least. The prognosis after removal is variable as a rule and the duration of life after the appearance of symptoms is usually from one and one-half to 1 year. (One patient is reported by Peuch and Massabian (see Perlman) to have lived six years after operation.)

Briefly the salient features of two tumors reported in this article were as follows:

The first tumor was found in the body of a uterus surgically removed from an unmarried woman aged 60 years. The clinical diagnosis was malignant fibromyoma. The growth was 8 cm in diameter. The lining of the uterus covering it contained irregular polyps and in the tumor large masses of tissue were recognized even macroscopically as cartilage. Microscopic preparations contained hyaline cartilage, trabeculae of bone, smooth muscle, levioli of round and spindle-shaped cells, and fibrous tissue. In the sections studied, about 2 per cent of the tissue was bone, 35 per cent was hyaline cartilage, 35 per cent was smooth muscle, 30 per cent was white fibrous connective tissue, and 1 per cent was alveoli of round and spindle cells. The patient died from recurrence of the tumor in the pelvis three months after the operation and one year after the appearance of symptoms.

The second tumor was diagnosed clinically fibromyoma. The patient was an unmarried woman 54 years of age. The uterus was removed completely. Microscopically this tumor contained large masses of fatty areolar tissue separated by bands of fibrous tissue in which there were small groups of cartilage cells and narrow bands of smooth muscle cells. About 1 per cent of the tissue was cartilage and smooth muscle fibers, 5 per cent fibrous tissue, and 94 per cent fatty areolar tissue. The patient is living well two years after the operation and six years after the appearance of symptoms.

C. H. D. VAN, M.D.

Hartmann, H. Fundal Hysterectomy (L'abaissement du fond utérin). *Gynéc. et Obst.* 9: 4, 429

Under the title fundal hysterectomy, Lécot and Gaudard d'Allaines have recently described the ablation of the fundus of the uterus and of both tubes with conservation of one ovary or at least a substantial fragment of one ovary. Its originality is claimed for the idea. As far back as 1899 Z. eifel demonstrated that the conservation of an ovary and considerable portion of the uterine mucosa is sufficient to assure the persistence of the menstrual function. The technique recommended by Lécot is briefly as follows:

After proper hemostasis the diseased ovary and both tubes are liberated by dissection whereupon the uterine arteries are ligated just below the plane of the uterine section. This plane while considerably higher than that of the usual supravaginal hysterectomy is low enough to include all that portion of the uterus which ordinarily shows the greatest evidence of disease, i.e. the mucosa of the fundus, the uterine horns, and the interstitial portion of the

tubes. A circular cone shaped incision removes the body of the uterus with all its appendages leaving a segment of the uterus standing at least 3 cm. above the isthmus. Despite the fact that the round ligament are cut there is no danger of retroversion of the stump. After it has been covered with the loose peritoneum lying between it and the bladder the so-called retrovesical peritoneum.

The functional result of this operation is very good. Of six teen patients ten or thirteen had complete freedom from trouble and no menstrual irregularity. In three cases the results are only fair some patients because cervical stenosis had occurred but not flaps. Certainly the result is better than when only one ovary is preserved and the entire uterus is removed.

KNOX J. MORGAN, M.D.

Fletcher M. W. Chronic Endocervicitis. *Brit. J. Stat. Med.* 1934, 3, 133.

Chronic endocervicitis is the most common pathologic entity among gynecologic disorders and is second in importance to the potential menace of all of the pelvic structures. It seems to be definitely established that the corpus uteri is infected in infected with relative frequency. In adults endocervicitis is due usually to gonorrhea, postpartal sepsis, or trauma caused by coitus, instrumentation, curettage or birth injuries.

The pathology is that of erosion, gland-cell infiltration and mild or severe loss of the glands and connective tissues. Around these may be simple erosion, ectropion, condyloma papillary, erosion ulceration, mucous polyps, leukoplakia, stenosis, cervical stenosis or carcinoma of the cervix.

Dependence on the pathological course the intensity of the symptoms may vary from mild leukorrhea to complete functional sterility. The bacteriological examination shows the gonococcus or some other pus producing organism.

The treatment necessitates the removal of infected tissue in the cervix. The author believes this is best accomplished by the removal of the entire endocervical mucosa by Sturmdorf technique or by the use of radium as advocated by Carr.

H. W. L. M.D.

Davis, L. Carcinoma of the Cervical Stump. Report of Eight Cases. *British Medical Journal* 1934, 304.

After mention of the fact that myomata and carcinoma are often associated in the uterus and reference to the frequency of cancer in the cervical stump the author reviews the 8 cases of cancer which were admitted to the Massachusetts General Hospital between January 1917 and January 1933.

In eight of these cases the cancer developed in the cervical stump after supravaginal hysterectomy for fibroids. The interval following the operation (twenty four years in one, fifteen years in one, six years in one, three years in three and less than

year in two). In the three cases in which the interval was five or more years the growth was probably new development but in the other five it was probably a recurrent condition not recognized as insufficiently treated. In four cases the primary operation was done elsewhere.

In all cases of fibroid in which hysterectomy was contemplated the cervix should be very carefully investigated and the uterus curetted before operation. If there is any suspicion of malignancy total hysterectomy should be done. The occurrence of the eight cases is appended. ROY E. CARVER, M.D.

Eden, T. W., and Goodwin, A. T. Cases of Cancer of the Cervix Treated by Radical Pelvic Operation. *Proc. Roy. Soc. Med. Lond.* 1934, 27, 100, Ser. Obst. & Gynaec. 3.

Case 1. The patient was a multipara 55 years of age who had a extensive friable growth on the cervix which extended for 2 cm down the posterior wall of the vagina. Signs of malignancy had been noted for three months. A sharp spoon was used to form a cavity in the cervical mass and 100 mg. of radium bromide were left in place for twenty-four hours. One month later digital examination and inspection through a speculum revealed no trace of the growth. Wertheim's hysterectomy was then performed and followed by a normal convalescence.

Macroscopically the peritoneal surface of the uterus was smooth, and the posterior vaginal wall presented a healing surface. The endocervix was occupied by a fungating granular growth spreading upward toward the body of the uterus and downward toward the vaginal surface. Microscopically the vaginal portion of the cervix and the posterior vaginal wall showed a healing granulating surface. No malignant cells were seen in the material or the cells of the endometrium showed definite malignant changes. The ovaries presented acute fibrotic changes.

Case 2. The patient was a multipara aged 47 years who had a large irregular friable growth of the cervix which practically filled the upper part of the vaginal canal. For five months previous to the operation there had been blood stained vaginal discharge. The fungus contained a purple blood. Scraps from the cervix showed a columnar-cell papillary cancer of the cervix. One hundred and sixty milligrams of radium bromide were left in the excised cervix for ten-four hours. Fifteen days later the cervix and vagina showed no trace of the growth. Wertheim's hysterectomy was then performed.

Macroscopic examination showed fibrosis in the posterior wall of the uterus and a polypoid projection in the endometrium. The cervix was hard pertrophied and tough, and presented several hard whitish areas. The ovaries were tough and fibrous.

Microscopically the uterine wall and polypoid showed polypoid endometritis, the tough cervical area showed columnar-cell carcinoma under going hyaline degeneration, and the upper part of

the vagina presented an extensive round cell infiltration.

Pre-operative radium treatment given before operation greatly simplifies the operation by removing most of the proliferating growth and, by causing degeneration of the cancer cells, lessens the danger of cancer implantation. A much of the proliferative mass as possible should be removed with a sharp spoon in order that the radium may be brought more directly in contact with every part of the growth.

V. F. DREW, M.D.

Reef, P. J. and Charlton, P. H. Sarcoma of the Uterus. *A. Surg.* 93: 1874, 476.

The authors emphasize the importance of every careful microscopic study of all suspicious areas found in uteri removed on the clinical diagnosis of multiple fibroids. Of 200 uteri thus examined they found eleven to be sarcomatous. Nine of these presented grossly the picture of definite multiple fibroids and in the majority the gross section revealed an area of apparent sarcomatous change enclosed within the fibroid masses. It is not uncommon to find multinodular uteri with but one nodule showing sarcomatous transformation. This could tend to strengthen the contention that sarcoma may arise in fibroid. H. W. F. M.D.

ADRENAL AND PERI-UTERINE CONDITIONS

Spencer, H. R. Ten Cases of Ovariectomy in Women Over 70 Years of Age. *Br. M. J.* 9: 3, 4, 58.

The ten cases reported occurred in a series of 63 cases of ovarian tumor operated upon. The age of the ten patients ranged from 70 to 81 years. The oldest woman ever subjected to an ovariectomy was 94 years of age.

All of the tumors in the ten cases reported were benign. Eight were multilocular cysts. All of the women recovered from the operation. Ether seems to be safe anesthetic in the cases of old persons. Infiltration and spinal anesthesia seem to be generally avoidable. H. W. FINE, M.D.

EXTERNAL GENITALIA

Wander, H. and Hueb, P. Cysts of the Labia Minora. *Les kystes des parties externes. Gynec. et Obst.* 1, 20.

The authors review the literature of cysts of the labia minora discuss the different types of cyst from the anatomic and histological standpoints, and report cases with the microscopic findings.

Sebaceous and epidermal cyst may be attributed to inclusion or occlusion process. The mucous cyst may be divided into two groups: those in which the cyst is lined with non-ciliated epithelium and those in which the cyst is lined with ciliated epithelium. The literature report thirty-eight cases of this type but in seven the pathologic report is inefficient. In the remaining thirty-one the cysts were

studied as to contents, lining epithelium, and outer coat. In ten there was no lining epithelium the stromal coat being in direct contact with the fluid contents of the tumor. Most of the cysts contained viscous, colorless, slight yellow or brownish fluid. Cholesterol crystals were frequently found. The fluid was a septic except in a few which had been infected secondarily. In some cases non stratified muscle was found. The outer coat merged with the structure of the labia minora.

The authors believe that these cysts are derived from the wolffian duct rather than the müllerian duct. It is held by certain other investigators but state that, so far no one has proved that they are so derived. They reject the hypothesis that they may be derived from Bartholinian aberrants or from the mucous glands which Kollmann and Schantz has found in the labia of the newborn.

S. DE P. LIMA, M.D.

MISCELLANEOUS

Hertzog, G. K. Gonorrhea in Women. *Cal. J. State J. M.* 9: 3, 221, 3.

The cases of gonorrhea in women seen in both private and clinical practice are usually the advanced cases with involvement of the glands of Bartholin, Skene's glands, the cervix, and the tubes. To effect cure the glands of Bartholin must be incised, Skene's glands opened and cauterized with the thermocautery, the urethra injected with a strong alkaline solution, the cervix dilated, and the uterus applied internally.

Frequently the physician fails to diagnose gonorrhea because he does not find the gonococcus. The fault lies usually with him rather than with the laboratory technician. It is necessary to milk the urethra with considerable pressure. The pus should be expressed also from Skene's glands and the glands of Bartholin. The cervix should be very carefully wiped off and sponged with sterile water half a dozen times and the discharge obtained by massage collected on slide and examined. Several slides should be made on different days before the diagnosis is definitely established.

Leucorrhea and uterine discharge are very often of gonorrheal origin, and one can safely say that a bacteria of the gland of Bartholin is always gonorrheal.

Periurethral bacteria the female following gonorrhea is a troublesome condition, particularly when it is so close to the internal phincter that urine may be mixed with the pus. These cases may be treated with alkaline irrigations and massage. Massage is the greatest help but in some cases surgery becomes necessary.

In conclusion, Hertzog states that the local treatment of gonorrheal vulva and vagina, namely the excision of the Bartholin glands and the direct application of the cautery to the urethra and cervix, has given most gratifying results.

LETTIE GROSS, M.D.

Wetzel W. The Treatment of Peritoneal and Genital Tuberculosis in the Female with the X Ray (Die Behandlung der Peritoneal und Genitaltuberculose des Weibes mit Röntgenstrahlen) *Monatsschr. B. Gyn.* 9: 333 (1911)

The author states that in cases of tuberculous peritonitis treated with the X ray (the efficiency of which he attributes to stimulation of connective tissue proliferation) he obtains good results in 5 per cent and the mortality is 15 per cent. The best results are obtained in tuberculous of the adnexa. A tuberculous ulcer on the anterior wall of the uterus also treated in this way successful. Usually a permanent amenorrhoea is produced which is very desirable in cases of severe menorrhagia and justified even in the absence of menorrhagia by the deleterious influence of menstruation on the local condition. In cases of exudative peritonitis the raying should be done only after the exudate has been removed. (GASTLEY (7))

Vogt E. The Healing of the Wounds of Gynecological Operations Following Previous Roentgen Treatment (Wie heilen gynäkologische Operationen nach vorausgegangener Röntgenbestrahlung?) *Arch. Gyn.* 9: 21 (1911)

On the basis of twenty-eight laparotomies which had been preceded by roentgen treatment Vogt attempted to answer the following questions: (1) Is operation made more difficult by previous roentgen treatment? (2) What is the effect on the healing of the wounds on the abdominal wall and upon the pelvis? (3) Do late injuries from the roentgen treatment show in the region of the scars?

He found that previous use of the roentgen ray does not make gynecological operations more difficult to a marked degree and does not exert any effect on the healing of the wound. The third question Vogt was unable to answer as the time since the operation was too short when this article was written. (GASTLEY (7))

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Vignes, H. and Hermet, P. Sedimentation of the Red Blood Corpuscles and Gestation (Sédimentation des globules rouges et gestation) *Rev. franc. de gynéc. et d'obst.* 9 3, xvii, 4

From their experiments the authors draw the following conclusions:

1. The reaction of F. hirtus is observed not only in the course of gestation but also in anemia caused by repeated loss of blood, the development of tumors, and in acute infections with pus formation. It is not of value in the early diagnosis of pregnancy.

2. The disappearance of the reaction in the postpartum and postabortion period varies with the elapsed time.

3. The theory that the reaction is due to some substance in the red blood cells is not confirmed.

4. The addition of serum of distilled water or physiological serum did not accelerate the reaction. Therefore the theory that the reaction is due to a decrease in the specific gravity of the plasma is not confirmed.

5. The reaction appears to be due to a chemical modification of the plasma, particularly in the relation of the colloids, an increase in the fibrinogen and the serum globulin in relation to the serum-albumin. S. DE PALMA, M.D.

Williams, P. F. Glycosuria Test for Pregnancy. *Am. J. Obs. & Gynec.* 9 3, xiv, 369

The proposed methods are tested on the pregnant and aborting women in the gynecological service of Girvin.

Ten women are tested by the original method proposed by Frank and Nothman. This series included six aborting women and four women pregnant earlier than four months. The blood sugar did not reach 6 per cent in any case. All showed glycosuria after from thirty to forty five minutes. In a few cases the percentage of sugar in the urine is higher than the values given by Frank and Nothman.

Eight women are then tested by the modification proposed by Roubischek. Six of these who are aborting, did it in early pregnancy are given glucose and epinephrin. In only one case was positive response obtained and in not one did the blood sugar rise above 1 per cent at the end of forty five minutes after the administration of the test material.

Fourteen women are tested by the phlorizin method. Eight were normally pregnant, four were aborting, and two had tubal pregnancies. In but two cases, both those of pregnant women, was a positive response obtained. The blood sugar showed no rise during the test.

These discordant findings are rather puzzling. Controls were therefore carried out on non pregnant women. A positive response was obtained in only one—53 year old woman who had had an operation for prolapse and showed slight glycosuria following the administration of 100 gm of glucose. In no other case was a glycosuria obtained with any of the methods. E. L. COE, M.D.

Wright, H. W. Psychoses of Pregnancy and the Puerperal State. *California State J. M.* 9 3, xii, 70

The insanity of pregnancy and the puerperium cannot be considered a psychiatric entity. While any type of psychosis may occur during pregnancy or the puerperium, the vast majority of cases fall into the groups of manic-depression, insanity, dementia praecox, and toxic or infective syndromes. The first two occur frequently without fever or other demonstrable evidence of physical abnormality.

In the diagnosis it is desirable to know the personality of the patient for often this is of aid in the prognosis. In dementia praecox the prognosis is poor. In the delirious type the prognosis is excellent. In the purely manic-depressive type of case recovery is usually complete after about five months.

H. W. FRAZAR, M.D.

Hannah, C. R. The Value of Abdominal Measurements in Recognizing the Size and Maturity of the Fetus. *Texas State J. M.* 9 3, xlviii, 543

The factors contributing to the oversized fetus should be eliminated whenever possible.

The large fetus has but little if any advantage over the fetus of 6 or 7 lbs. The cells of the large fat baby are waterlogged and usually its weight loss is from 1 to 1½ lbs. while medium sized baby a baby weighing less than 8 lbs. loses probably 8 to 10 oz. The medium sized baby has greater resistance and does not so often have the fever of inanition or tarboon in the first few days of post-sterneal life.

The length of the fetus before birth may be determined by Ahlfeld's rule. One point of the pelvimeter is placed in the genital fold near the clitoris, the soft tissue being pushed up until the point of the pelvimeter rests near the upper border of the symphysis, and the other tip is placed at the upper pole of the fundus. The reading in centimeters is then taken, 1 cm. are deducted for the thickness of the tissues, and the remainder is multiplied by 2.

To obtain the occipito-frontal diameter Perret has taught us to place one tip of the pelvimeter over the occiput and the other over the frontal and take the reading without any deduction for tissue. The subtraction of from ¼ to ½ cm. from this reading gives the biparietal diameter. If the occipito-frontal

is from 10 to 11 cm. subtract 1.5 cm.; if 11.25, deduct 2 cm. If 11.5 deduct 2.25 cm. If 12 cm. or more, deduct 2.5 cm.

Hopkinsburg figures show that uterus filled with the average size fetus will measure 14.5 cm. from the upper border of the symphysis to the fundus. McDonald has demonstrated that a fundus 1 cm. high from the upper border of the symphysis will probably be a full-rigging fetus 50 lb. For every centimeter low 15 lb. difference and for each centimeter below that amount he loses 20 gm.

It is recognized fact that toxemia of pregnancy can be prevented secondly only by prevention, and that prevention of preeclampsia means maintenance of the patient in a state of intelligence and active supervision. If they do not yield to active treatment the of tetraols may inform him well with the use of the rules described in the period of maturity of the fetus. This same principle is applicable to cases of acute toxemia but is less so and constitutional diseases of the modern principle based upon reasonable fact. (C. H. D. vii, M. D.)

Gilbert T. C. Interstitial Pregnancy. *Texas State J. M.* 9, 3, 1911.

The author reports a case of interstitial pregnancy which presented the classical fundamental syndrome of the uterine ectopic variety of pregnancy and, in addition, crisis of interstitial point, namely, characteristic of the interstitial type. On the usual examination of the fundus of the uterus, found lateral to the decidua of the pregnant horn, this being due to the characteristic tendency of the interstitial type to develop upward, thus forming the uterus into a cone, the tip pointing upward and outward.

In interstitial pregnancy, are more pituitary and the uterus posterior and is known to the disease of Douglas's upward and tense. In this case pregnancy is the normal type, born as singularly as may be confirmed with interstitial pregnancy, but it is the first named condition the symptoms are more pituitary than those of normal pregnancy.

The duration of gestation of some differential for and should always be taken into consideration. The average time of rupture in the classical type of pregnancy is the fourth week, while in the interstitial type it is the eighth week. In the latter it may be even the tenth month. Thus it is obvious that the interstitial type gives more time for study and observation. (C. H. D. vii, M. D.)

Streeter D. L. Subcutaneous Implication of the Human Ovary. *J. Am. M. A.* 9, 2, 1911, 670.

The case reported appears to be unique but the fact meeting brief attention is that the human ovary is capable of developing to the size of the egg in the environment furnished by the superficial fascia of the abdomen.

When first seen by Lewis of Glenview, Ill., the patient, a woman aged 25 years who had been married for four years and had had one abortion and no children, presented mass the size of cherry in the lower abdominal region at the upper end of the scar of a previous operation. A provisional diagnosis of ovarian teratoma was made. Ten weeks later the swelling had doubled in size and on account of its rapid growth an exploratory examination was decided upon. This was performed by Lewis four weeks after the patient first came to him, by that time the enlargement had reached the size of a hen's egg.

After incision disclosed, just beneath the skin, embedded in the superficial fascia, a relatively thin-walled and partially transparent cyst, which on removal proved to be intact chorionic sac and on being opened was found to contain a well-formed embryo.

The chorionic sac was certainly growing up at the time of the operation, of its histologic condition was compatible with full further growth, although the prominence of the so-called Hofbauer cells was the sign of an approaching arrest of development. It thus follows that under these circumstances the growth of the sac is not continuous longer than that of the embryo. The uniformity of the author's laboratory experience with abortion material in general, the chorion is proportional to further development than the embryo, however. It is to be remembered that the fetal sac, the region mentioned is not so profusely vascularized, the vessels surrounding the fetal sac at uterus, and this might have been a factor in the arrest of development. It can only speculate on what might have happened if the mass had not been removed. It is not probable that it would have grown much larger. Re-ovary on the basis of tubal openings further hemorrhages, though not serious ones, might have occurred and the entire structure might have been slowly absorbed. On the other hand, there is the remote possibility that the mass might have given origin to malignant growth of the uterus. The findings in this case are very suggestive to the experimental embryologist. (C. H. D. vii, M. D.)

Lamour, P., and Vernequin, H. The Serous Diagnosis of Syphilis in the Fetus or Parturient Woman. (*Le séro-diagnostic de la syphilis chez la femme en état ou récemment accouchée*). *Crédit de l'obst.* 1912, vii, 30.

Despite the controversy to which it has given rise the serous diagnosis of syphilis has definitely proved its value. Streuck by the remarkable similarity of findings of the clinical and laboratory examination in thousands of cases of syphilis, which has been either suspected or recognized with certainty, the authors studied the Bordet Wassermann reaction in pregnant and parturient women. A large number of cases in the obstetrical clinic, the serous diagnosis has confirmed a doubtful diagnosis, and in a few cases has revealed the condition when it was not suspected.

1. *Definite cases of syphilis* In twenty-nine cases in which syphilis was recognized the results of the test were the same as those observed in other positive cases. Twenty-three of these cases were those of young women who had had no anti-syphilis treatment. Six cases in which the test was negative were cases of old lesions or recent lesions which had rapidly regressed under treatment.

2. *Placental hypertrophy* Under this term are classed those cases in which the only sign indicating syphilis is hypertrophy of the placenta. Only one case showed a positive reaction. A negative reaction does not exclude the possibility of syphilis; this can be done only by repeated careful examinations of the infant during the first months.

In 57.5 per cent of the entire series of cases a positive reaction the feto-placental relation was 4.5 or over and in only 3 per cent was it under 1.4. These findings are therefore very similar to those of Levy Solal, with whom the authors agree that before it is concluded on the basis of negative serum reaction that hypertrophy of the placenta is not of syphilitic origin it is necessary to prove the absence of syphilis in the parent or the grandparents.

3. *Macerated fetus recognized syphilis* In these cases the mother does not admit any former specific infection and does not exhibit any indications of recent old lesion. The fetus is characterized by the maceration is of long standing; the stomach is voluminous (seventeen cases) and the liver occupies the greater part of the abdominal cavity. In the cases in which it was possible to make direct examination the treponema was always found in the liver. The placenta is distinctly pathological; the feto-placental relation is raised, and besides the changes due to the maceration, the washed and massaged appearance of the placenta and its friable consistency are characteristic of syphilis.

Two negative reactions confirmed the laboratory findings. The death of the ovum may be attributed to endometritis. A case deserving particular mention was that of a man of 34 years who had had two successive normal gestations. One of the children had succumbed to convulsions. The third gestation was complicated by hydramnios, and near term a macerated fetus was expelled. The liver of the fetus showed no hypertrophy or macroscopic alteration. Despite the negative reaction and the absence of clinical signs, syphilis cannot be positively excluded.

4. *Death of successive infants* In such cases the serum diagnosis is of great value. Undoubtedly the clinical examination alone is occasionally sufficient to discover syphilis, and in many doubtful cases a positive reaction will confirm suggestive clinical signs. In the authors' series the findings of the physical examination were confirmed by positive reaction in eleven cases. In six of twelve cases in which the reaction was negative a premature macerated fetus was expelled. In these cases a change in the body

fluids incident to gestation may have been responsible for the negative reaction.

5. *Hydramnios and large ovum* Of nine cases of hydramnios, positive reaction occurred in only one. The very heavy placenta showed the characteristic changes of syphilis. In one case the placenta was very large despite negative reaction and it seemed probable that syphilis was the cause.

6. *Abortions* In all of twelve cases of abortion the laboratory findings agreed with the clinical findings, being negative in cases of accidental abortion due chiefly to endometritis, and positive in cases in which history of syphilis was given and in young women in whom the abortion was the first sign of acquired syphilis.

7. *Early fetal death* Six cases of premature labor followed by early death of the fetus showed positive reaction indicating the presence of syphilis which might easily have passed unrecognized.

8. *Pernicious anemia* In the two cases of pernicious anemia observed the serum reaction was negative.

9. *Fetal malformations* Syphilis may give rise to dystrophies leading to congenital malformation. Frequently it is derived from the grandparents and for this reason it should not cause surprise if the mother shows negative reaction.

In the authors' entire series of 148 cases there are sixty-three positive reactions and eighty-five negative. All of the positive reactions were in accord with the clinical findings.

Those who have experimented on the sensibility of sera in prepared animals have found that a negative reaction does not exclude the disease with certainty. In explanation of this we know that antibodies appear as the indicators of a change in the body fluids caused by infection. Taking 100 as a standard of value for untreated secondary syphilis, the intensity of modification is 5.0 in tertiary syphilis and 0-5 in old treated syphilis. These values differ in different persons and in the same person in the course of time and under the influence of specific treatment.

In many cases the laboratory test is insufficient to differentiate between normal and abnormal sera because, when the changes in the body fluids are slight, our methods are not sufficiently delicate to reveal them. It seems probable that a chronic infection is similar in its action to a drug. At first the body reacts vigorously but if the drug be continuously repeated the reaction ceases entirely or diminishes markedly. In the case of infection the evolutionary changes possible to the micro-organism and the possibility of change in its antigen-forming properties occurring within the host must be considered. In fact, negative reactions may be due to absence or diminution of serum modifications occurring when the body becomes accustomed to the bacterium or to biological variations in the latter. Changes in the serum are complex, some may mask and some may neutralize (inhibitory substance of Calmette).

ROSCOE JENCKS, M.D.

Normal cases of pregnancy show a curve coinciding with that of normal non pregnant cases and suggesting that the so called liver of pregnancy with its various physiological changes has no actual impairment of function. Toxemias of pregnancy show definite relation between the degree of liver impairment as measured by this test and the degree of toxicity as evidenced by the clinical picture.

The results obtained in several cases suggest that this test is a more accurate index of existing toxicity than the variable clinical symptoms, and that it may be possible by means of it to anticipate the clinical picture in forming an opinion as to the degree of toxicity present at given time. Toxemias of pregnancy including eclampsia show definite liver impairment and subsequent relief from toxic symptoms there is return of the liver function to the normal limit.

The authors believe that this test gives a quantitative index of functional capacity of the liver and that in the toxemias of pregnancy it will aid greatly as an index of treatment and assist in determining the time at which therapeutic abortion or induction of labor should be performed when these measures become necessary.

C. H. D. VAN, M.D.

Iulfiart R. Phenobarbital Sodium (Luminal Sodium) Treatment for Hyperemesis Gravidarum. *Am J Obst & Gynec* 9:3 xiv 4

Phenobarbital sodium gr. i is administered hypodermically. The pure or powdered form only is used as the milk sugar in the tablet triturates will often cause bacteremia. In the majority of cases it is administered every four hours will suffice but it may be given at shorter intervals for three or four doses if relief is not prompt. If the case is seen early regular feedings are continued six days. Great care must be taken in the general management. There should be examinations of the urine, record of the total intake and output of fluids, daily blood-pressure determinations and pulse temperature and respiration records.

If the patient is starved and there has been considerable loss of weight and strength, or of infants food, invalid formula is given every hour and carbomated water or tap water if preferred, midway between feedings. The bowels are evacuated by cathartics and are made to move daily with the help of enemata if necessary. Fluids, Fischer's or saline solution are given by rectum as needed to supply water and alkali reserve. The patient is not allowed to receive visitors and her room is kept darkened. When she asks for food frequent feedings in small quantities are given. The amount and kind of food are determined in the manner in which it is retained. When regular meals are resumed a hypodermic dose of phenobarbital sodium is administered fifteen to twenty minutes before the meal. As food and water are taken and retained the mental and physical condition improves rapidly. If the case is obstinate it may be necessary to continue treatment until the end of the third month of pregnancy.

The sensation caused by phenobarbital sodium is described as a fluid feeding of the entire body.

Occasionally the patient sleeps during the day and lies awake at night. A hypodermic of 7 gr. of caffeine sodium benzoate administered with the phenobarbital sodium will help to overcome this and will not interfere with the quieting effect on the nausea of the phenobarbital sodium. A cup of coffee serves the purpose somewhat less satisfactorily. The only ill effect of phenobarbital sodium observed has been urticaria. This is relieved by sponge baths of 1 per cent lysol solution.

J. L. CONNELL, M.D.

Runnels, S. C. Eclampsia. *J Am Inst Hygiene* 9:3 xiv 90

The author reports nineteen cases of eclampsia without a death which were treated by modification of the Tweedy Stroganov and cesarean methods during the last three years.

In the Tweedy treatment the entire bowel is emptied by a thorough cleansing. Tweedy begins by washing both the stomach and bowel by repeated washings until the water returns clear. After this procedure some water is left in both the stomach and the rectum and 1 oz. of castor oil and a drop of croton oil are left in the stomach. Three hours later this washing out is repeated until the water again returns clear. The enema is repeated every three hours as long as the eclampsia continues or as long as foreign matter is obtained.

The intestine is then kept empty except for the replacement of fluids, which are forced per rectum. No food at all is given, and when the eclampsia ceases, the resumption of feeding is begun very cautiously as the first food often reestablishes the convulsions. Milk is the first food allowed and is given in small and experimental doses. Absolute abstinence from proteins is essential during the toxemia. Even the patient's own saliva, if swallowed, is enough to cause a convulsion. Therefore the patient is kept on her side to drain the saliva.

The convulsions are so controlled by the older method of Stroganov who gives no thought to the possible etiology of the eclampsia but as the result of empiricism discovered that if the convulsions are subdued the toxemia will often pass. Morphine is the mainstay in this subjugation and is given heroic doses. A half grain as an initial dose is rarely excessive although it is considered better to give a quarter grain doses at half hour intervals. A quarter grain dose may be repeated as often as needed to quiet the patient until as much as 3 gr. has been given in twenty-four hours.

A eclamptic patient is very immune to the toxic effect of morphine and the drug may be pushed until the respirations are below ten per minute. If the morphine must be supplemented chloral per rectum or an anesthetic may be employed. Chloral has long been used in eclampsia, but it is the opinion of the author that it is best omitted because of its irritating effect on the kidney. In the choice of an anesthetic, chloroform must be eliminated in phys-

under the anesthetic by $\frac{1}{4}$ gr of morphine and $\frac{1}{100}$ gr of scopolamine hydrobromate and two subsequent doses of $\frac{1}{100}$ gr of scopolamine at one-half hour intervals. She is kept under the effect of the anesthetic by the administration of $\frac{1}{100}$ gr of scopolamine given every 15 hours until delivery.

In the management during delivery a Bierhaldler leg holder is used and the patient's hands are secured so they cannot reach below the waistline. An additional dose of scopolamine may be given at delivery so that the interval at this time will not exceed one to one and one-half hours. For forceps delivery and minor repairs no further anesthesia is necessary. For extensive repairs or for version, deep surgical anesthesia is induced.

The patient is not allowed to receive visitors. She is given plenty of water but no food as food is not retained. If she becomes excited, the scopolamine is discontinued.

In 103 deliveries there were forty-eight still births from various causes but none due to the anesthetic. Of three maternal deaths, one was due to eclampsia, one to septic peritonitis, and one to an influenza pneumonia. Of 563 deliveries, 737 were those of multiparae and 877 those of primiparae. Twenty-five multiparae and 157 primiparae were delivered with forceps. Postpartum hemorrhage occurred in sixteen multiparae and fourteen primiparae, but in every case was easily controlled.

ROY E. CRAWFORD, M.D.

Gordon, C. A. *The Management of the Third Stage of Labor*. 4m J Obst & Gynec. 9:3 XIV 403.

The author has treated the third stage of labor in 1600 cases. As soon as the child is born, tell-tale tape tie is loosely placed upon the cord, at the vulva. The fetal end of the cord is not clamped, but is closely tied when pulsation stops. The abdominal coverings are then removed and the patient is carefully examined for the signs of placental separation. After physiological period of inertia, the uterus rises above the umbilicus. It is not relaxed or soft, but firm in the upper segment. The lower uterine segment may be distended over the pubes, although this sign is not constant. A detached placenta half way through the upper segment into the lower or protruding through the lower uterine segment into the vagina may not distend the uterus. Descent or advance of the cord with its tape tie from 0 to 5 cm is constant.

When these tell-tale signs are noted the patient is instructed to bear down. If there is distention of the rectal muscles, these muscles are held firmly together after the method of Baer and she is again instructed to bear down. If this is not effectual the placenta is expressed by placing one hand on the fundus of the uterus and pushing the uterus straight down the vaginal axis. If all these methods fail, the bladder is catheterized if necessary and the Credé method is employed, anesthesia being induced if necessary.

The membranes are treated expectantly without torsion. Traction may be used only after partial descent of the membranes.

If the placenta is still retained, or if it has not yet separated, the cord is cut just within the vulva, the tell-tale tie being left in its place. Pituitrin is not given. The patient must then expel the placenta herself or it may be expressed subsequently by the Credé method. Nothing further is done unless hemorrhage occurs, when the Credé method is used under anesthesia or, that failing, the placenta is removed manually.

It is obviously more possible to conduct the third stage of labor by rule than the first stage.

In the series of 1600 cases pieces of membrane were retained in four without any disturbance other than the pain incidental to their expulsion in clot. There were nine cases of twin pregnancy with one placenta and five with two placentae. In none of these was there placental retention or postpartum hemorrhage.

The author gives his conclusions as follows:

1 The recognition of separation is of great importance.

The frequent occurrence of speedy separation is responsible for the success of the Credé method.

3 Indiscriminate use of the Credé method will cause the very end results which that operation is designed to avoid.

4 Students should be taught that the Credé method is for the pathologic third stage.

5 Retention often occurs in the lower birth canal because of the recumbent posture of the patient and her inability to use her abdominal muscles which are then chiefly concerned in expulsion. The primitive sitting posture might be used in cases of delayed expulsion of the placenta.

6 The placenta may be retained safely for many hours.

7 The adherent placenta is rare. It causes no bleeding until partial separation occurs.

8 The completely separated placenta causes no bleeding.

9 The partially separated placenta always causes bleeding. This is the placenta which calls for manual removal.

Manual removal has high mortality but distinct indication—hemorrhage. Delay is dangerous after hemorrhage occurs.

Detailed studies of the management of the third stage of labor are numerous in the literature. Gordon found nothing so practical or precise as Polak's study in 1915.

E. L. CRAWFORD, M.D.

Galliani, P. *Transperitoneal Cesarean Section of the Lower Uterine Segment in Fifty Cases*. (A propos de 50 cas d'opération césarienne trans-péritonéale sur le segment inférieur). *Rev. franç. de gynéc. et d'obst.* 9:3 XVII, 33.

The author does not describe his technique in this article as he has done so previously but discusses his cases with regard to the value of the operation, the

after the day when defecation she felt her
omb drop. Examination showed a cloughing
mass, the terms, in the vagina. Manual replace-
ment, which as difficult and consumed 15
minutes, was followed by a successful recovery.

H. W. I. A. M. D.

Bumm, E. Serotherapy and Chemotherapy in
Puerperal Infection (Leber Sero und Chemo-
therapie bei der puerperalen Wundinfektion). *Woch-
schr.* 93, 117.

In the field of wound infections proof of the ef-
ficacy of therapeutic procedures is particularly dif-
ficult to obtain. Comparisons between man and
man are only limited because for example
man is extraordinarily susceptible to streptococci,
while in animals these micro-organisms never cause
similar diseases. In addition, the course of wound
infection in man is extremely variable. If the turn-
ing point for the better coincides with the therapy,
false conclusions are easily possible. The difficulty
of judging is particularly great in puerperal fever,
which runs its course in the depths of the body.
Bumm found, for example, that cases of ascend-
ing gonorrhoea or retained lochia are often treated
with streptococcus serum. There are enormous dif-
ferences between local infection and progressing
phlegmon.

The first step is to determine the type of organism
which is causing the infection. The more numerous
the cocci and chains, the lochia, the more probable
bacterial invasion of the living tissue. Repeated
aerobic and anaerobic blood cultures all indicate
the spread and progress of the infection. Un-
fortunately, knowledge of the virulence of the infec-
tion in certain cases is still very deficient and clinical
experience shows that in wound infections this is of
the greatest importance. The best method of de-
termining the virulence is that of Ruge by which
the growth of the streptococci in the blood of the
patient is observed with the microscope.

The nature and virulence of the bacterium having
been determined the next step is an attempt to
render the organisms in the wound harmless by
means of local therapy. For approximately twenty
years Bumm has been aware of the impossibility of
local disinfection of the uterine cavity. He repeated
the experiment again with various disinfectants with
but in few hours organisms are again demonstrable
in the secretions. If staining solutions are used it
can be seen on section of the uterus that even after

thorough irrigation many crypts and folds of the
mucosa do not come into contact with the fluid.
If a portion of infected mucous membrane is taken
from a freshly extirpated septic uterus and placed
for twenty minutes in disinfectant bacteria can
still be grown from it. Moreover the irrigation of
septic uterus is not a harmless procedure as ery-
thema the first chill follows such treatment.

Another therapeutic method consists in the sub-
cutaneous or intravenous injection of immune bodies
or bactericidal chemical preparations. Serotherapy
and chemotherapy have become discredited because
too much has been expected of them and their aid
is called in too late. It is essential that they be
employed early while the infective process is still
circumscribed. Serotherapy and chemotherapy work
best as prophylactic measures. The practice at
Bumm clinic is as follows: (1) an intramuscular
injection of 50 c.c.m. of antistreptococcus serum
and (2) with the onset of chills, an intravenous in-
jection of 50 to 100 c.c.m. of a 1:1000 solution of
rianol. Above all, the natural defense of the body
is aided by the application of heat and the generous
administration of alcohol.

In 85 per cent of the cases it was possible to
localize the puerperal streptococcal infection. Under
sero-chemotherapy the total mortality was only
6.0 per cent.

The significance of bacteria in the blood in puer-
peral infection is variable as the organisms are often
forced into the blood stream by mechanical pro-
cedure applied to the uterine mucosa, and most of
them are destroyed in the subsequent chills. Much
more serious are the spontaneous eruptions of bac-
teria into the blood stream but even these cases
may be cured by injections of methylene blue.
The therapeutic effect is indicated by the critical
fall in the temperature, the disappearance of the
organisms from the blood, and the loss of hemolytic
power of the streptococci. In all cases which have
progressed to metastatic infections, serotherapy and
chemotherapy are useless. Probably the strepto-
cocci are present in the purulent masses and thrombi
of the circulation and are therefore protected from
the influence of any remedy. The situation is similar
in septic phlegmon of the pelvic tissues.

All in all, it may be said that the curative effect
of serotherapy and chemotherapy is confined to the
initial stages of the infection, but that here it is
distinctly evident. The first days of the disease are
decisive.

SCHMIDT (Z)

GENITO-URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Speciale, F. A Contribution to the Study of Hypernephroma (Contributo allo studio dell'ipernefrosi) *Fedici: Rome, 923, xxx, sez. prat. 107*

The author's case was that of a man aged 47 years. A diagnosis of hypernephroma was made. At operation the right kidney was found much deformed by tumor involving its entire upper portion and the suprarenal capsule. Following removal of the kidney and tumor the patient recovered.

Histologic examination of the tumor showed that the reticular tissue, which was abundant, was constituted of more or less fine fibers surrounding and even penetrating the tubules.

The anatomic pathologic and microscopic examinations confirmed the clinical diagnosis and led to the conclusion that the tumor originated from aberrant rests of the suprarenal capsule included in the kidney. This view was based on the subcapsular situation of the tumor, the diverse cellular type of the renal epithelium and the fat content of the cellular elements. The histologic specimens are prepared by the Achucarro method as modified by Del Rio Hortega. W. A. BARNES

Rosal, F. G. Remarks on 284 Cases of Nephroptosis (Observaciones en 284 casos de nefroptosis) *Rev. de med. y ciruj. de la Habana, 9, 3, xviii, 1.*

The author has observed 286 cases of nephroptosis in Cuba. Only one of the subjects was negro, 74 were females and thirty-two were males. The ages of the females ranged from 10 to 69 years, and those of the males from 15 to 55 years. In many cases the condition was familial and hereditary.

In all the cases examined by the author pressure upon the kidney in bimanual palpation was painful, but Rosal is unable to affirm Laquer's statement that the mobile kidney is painful when pressure is made upon it to reduce it into the lumbar cavity. Thus, he believes, is an excellent diagnostic sign differentiating between tumors and non-complicated nephroptosis. It is easy to replace the mobile kidney while mobilization of tumor is difficult.

W. A. BARNES

Nemenoff, M. J. Roentgenological Methods for the Recognition of Poles of the Kidney—Pneumoperitoneum (Roentgenologische Methoden zur Erkennung der Nierenpole—Pneumoperitoneum) *Wiens. klin. Wochenschr. 1922, 4, 377*

Changes in the position and form of the kidneys are usually not shown clearly in the ordinary roentgenogram. Better results are obtained with pyelography with the use of collargol. By this method it

is possible to determine from the position and form of the ureters whether pyeloc kidney (long, winding ureter) or a congenital dystopic kidney (short ureter with straight course) is present.

The best results are undoubtedly obtained with pneumoperitoneum as this procedure allows the accurate differentiation of all the organs from their surroundings, including the kidney. The technique employed by the author is as follows:

A dull needle fitted with a sharp stylet and double-current stopcock is inserted through the skin of the abdominal wall to the left of the midline and 1 fingerbreadth below the umbilicus. The stylet is then removed and the remaining tissues are penetrated with the needle alone. The stopcock is first connected with a syringe containing physiological solution and at the moment the needle enters the abdominal cavity the fluid from the syringe is injected. If no obstruction is encountered, the stopcock is turned and connected with two bottles, one of which contains air and the other solution of corrosive sublimate by elevation of the second bottle, the air from the first bottle is forced into the abdominal cavity the amount being indicated by the quantity of fluid entering the first bottle. Except for slight emphysema of the skin, the author has never seen any complications associated with this technique. He therefore recommends the method as entirely harmless.

LOV HOLT (2)

Young, H. M. Suggestion for Standard Technique in the Application of the Phenolphthalein Test in the Determination of the Relative Functional Capacity of the Two Kidneys *J. Missouri State M. Assn. 9, 3, 22*

7

To be reliable, the functional test of the kidneys must consist in the simultaneous collection of the secretion of both kidneys over the same interval of time. The test should end as well as begin simultaneously on the two sides.

The author prevents ureteral leakage by using on the sound side the Garco catheter which is conical. The urine then found in the bladder must come from the other side.

BRYAN F. ROLLER, M. D.

Herman, F. Renal Counterbalances: An Experimental and Clinical Study with Reference to the Significance of Disease Atrophy *J. Urol. 19, 1, ix, 285*

A study of the effect of increased work upon kidneys made by Herman brought out many interesting facts. After ligation of the ureter in rats for periods of one to six hundred days or longer the

average total increase in hypertrophy was found to be 50 per cent of the normal. Hypertrophy is relative term and the size the cell attains is dependent upon the strain to which it is subjected.

The article has most important clinical significance. It points out the lack of test to determine the renal reserve and the ability of the renal tissue to hypertrophy and, when surgical preservation of tissue is in point, the further determination of the probable action of competition and renal trophy in the final counterbalance. The anatomical changes are gradual and progressive.

In the event of a 2 stage operative procedure, the kidneys being treated in separate operations, the second operation must not be too long delayed. Repair on the side first operated upon may be so stimulating as to render the work of the unoperated and still inefficient side unnecessary. Delay will therefore lead to atrophy of disease.

THOMAS F. FINEA, M.D.

Papin, E. Lavage of the Kidney Pelvis (Les lavages du bassinet). *Arch. et mal. d. reins et d. organes genit. urinaires* 9, 2, 4, 80.

The effect of lavage of the kidney pelvis depends upon the condition of the pelvis and ureter and the technique and the fluid employed. There are three types of pyelitis, viz. acute pyelitis, simple pyelitis, and hydropyonephrosis. To the first type only instillations are applicable. In the third condition lavage gives only palliation or has no effect at all. The best results are obtained in the second type.

For instillations, concentrated antiseptic solutions (especially silver nitrate 100 or stronger) are indicated. Although these are well tolerated by the pelvis, they cause considerable pain when they reach the bladder. This inconvenience can be overcome by filling the bladder with salt solution.

In giving lavage it is necessary to fill and empty the bladder several times. Silver nitrate in weak solution may be employed. Even weak solutions have strong bactericidal power.

Potassium permanganate of potash has particular indications in gonococcal pyelitis.

Medicated oils and certain colloidal substances have the advantage that they remain in the pelvis long time. The author has obtained the best results from the use of colloidal iodine which is remarkably well tolerated by the mucosa and has high bactericidal power. The solution should be slightly heated before it is injected.

The frequency of lavage must of course depend on the severity of the condition but as a rule two to four per week will suffice and in subacute conditions, one week. The lavage should be continued until microscopic analysis of the urine demonstrates asepsis.

Lavage of the renal pelvis causes cessation of pain, sterilizes the pelvis, and decreases urinary retention. The first result is obtained rapidly. The last can not be obtained in all cases. The inflammatory dilatation caused by pyelitis can be diminished or

even entirely overcome if the infection is recent, but in cases of mechanical dilatation prior to the infection cases of infected hydropyonephrosis, lavage will not alter the size of the sac. W. A. BRYMAN.

Gault, J. R. Megalo-Ureter. The Importance of the Uretero-Vesical Valve. *J. Urol.* 9, 3, 12, 35.

The occurrence of an enormous dilatation of the ureter without any evidence of pathologic effect upon the renal pelvis or parenchyma is reported for the first time. The embryological causes are considered and the condition is compared to Hirschsprung's disease. Treatment by dilatation is ineffective but simple incision of the uretero-vesical orifice gives good results. In the female this can be done by means of special scissors placed beside the cystoscope. THOMAS F. FINEA, M.D.

BLADDER, URETHRA, AND PENIS

Kidd, F., and Turnbull, H. M. Angliomyoma of the Urinary Bladder. *Surg. Gynec. & Obst.* 9, 3, 330, 467.

The authors report a case of angliomyoma of the bladder in a man 29 years of age. The only symptom was urinary obstruction followed by catheter cystitis. Cystoscopy and operation revealed a smooth pedunculated tumor about the size of a date and with the appearance of a ripe raspberry. Microscopically this proved to be an angliomyoma of polypoid papillomatous form. The conclusions drawn are:

Anglioma or angliomyoma is probably the most rare type of tumor occurring in the urinary bladder.

If a diagnosis can be made at an early stage operation may be successful and should lead to a permanent cure.

If the growth is not detected until a late stage operation may be impossible and death may occur from hemorrhage. O. E. MADRAL, M.D.

Lower, W. E. Disposition of the Ureters in Certain Abnormal Conditions of the Urinary Bladder. *J. Am. M. Ass.* 923, 1222, 200.

The author believes that transplantation of the ureters into the rectum and sigmoid is the best method of treating most abnormal conditions of the bladder especially extrophy. The method of transplantation which is associated with the lowest operative mortality and greatest ultimate comfort is transplantation into the sigmoid or rectum.

Regarding the time at which the transplantation should be done the author believes that in the cases of children the operation should be deferred until the patient has reached the age at which he can be trained to control the anal sphincter and should then be done as soon as possible in order that the control of the anal sphincter for urine as well as for feces may be acquired most easily and completely and the child may mingle with his fellows and begin his schooling at an earlier age.

Preliminary to the operation the function of the kidneys is checked up by a examination of the blood and the use of dyes. For 10 days before the operation the bowels are cleansed, and on the day of operation a rectal douche is given. The patient is placed in the Trendelenburg position and the abdominal viscera are held out of the pelvis by gauze packing. The author uses the intraperitoneal method of approach and transplants the ureters into the bowel by the subserous implantation technique of Coffey. Two or three weeks after the transplantation of one ureter the other is similarly transplanted.

The author believes that an important part of the treatment is the use of a rectal tube following the transplantation until the rectum becomes adjusted to the presence of urine. The administration of saline rectal douches is also of importance.

The author's series of bilateral transplantation of the ureters into the large intestines includes sixteen cases, three of carcinoma and thirteen of ectrophy of the bladder. Although the sphincter control varies, in no instance in this series has it failed completely, and nearly every patient is able to hold the urine for from three to four hours. One patient is able to hold it for eight hours.

HENRY L. S. STONE, M.D.

CHEN, C. R., and SMITH, G. G. Chronic Urethritis in Women. *Boston V & S J.* 93: 423-424, 1906.

Chronic urethritis in the female is characterized by frequency of urination and pain on voiding. The cause is probably an antecedent infection which has left definite pathologic changes. The treatment is, first, dilatation of the urethra to 30 F and then the direct application of 30 per cent silver nitrate to the urethral mucosa through the urethroscope. A number of treatments are necessary.

ROD E. CHURCH, M.D.

MISCELLANEOUS

BROWN, G. V. A. and GARBELLE, C. Observations with Comments on a Study of the Urinary Tract of Eighty Fetuses and Young Infants. *Am J Obst & Gynec.* 9: 1, 1918.

It is a striking fact that as a study of eighty fetuses and young infants only 1 cent (3 of 33 per cent) were found entirely free from disease. While in 3.75 per cent only slight changes such as edema and passive congestion were found, these also confirm the evidence that the kidney is vulnerable and exceedingly responsive organ from its earliest stages of development. The material as not selected all that was available being studied. The authors reach the following conclusions:

Evidence of chronicity becomes apparent at an early age, even in the early months of fetal life.

1. Blood vessel involvement is not constant accompaniment of luteal changes in early life.

2. Renal hemorrhages, both primary and secondary are not rare in fetuses and young infants.

3. Inflammatory changes in the fetal kidney may be either cut or chronic, primary or secondary infectious or non infectious (chemical).

4. Malignant kidney tumors of sarcomatous nature may be found during the very early months of life.

5. Renal calculus occurs in early life (prenatal and early postnatal).

6. The kidney forms urine months before the maturity of the fetus, and probably in considerable quantity. The fetus may develop a toxemia from retention in its blood stream of kidney products, independent of the blood stream or kidney efficiency of the mother.

7. There is apparently a close relationship between the kidney and the brain and the drenab.

F. L. CONNELL, M.D.

DONDERO, A. P. Causes of Error in the Recent Genitological Diagnosis of Calculus of the Urinary Tract. (Cause di errori nella diagnosi urologica della calcolosi delle vie urinarie). *Falculi* Rome 913, 1917, ser. prat. 69.

Medical literature contains the reports of many cases in which diagnosis of urinary calculi was made but no stones were found at operation. The causes of error may be in the abdominal costal walls, the kidneys and ureters or other parts of the abdominal cavity.

Dondero discusses these causes of error in detail. Those occurring in the abdominal costal wall include contracted cutaneous or small fibrous tumors, calcified subcutaneous glands, calcifications in cartilages, bone formation in laparotomy incisions, injected substances such as iodine, trichloroacetic acid, myositis, calcification of serous bursa and of the thoracic muscles, calcification in cold, becomes second bones of the obturator muscle tendons and foreign bodies.

Conditions in the skeleton and ligaments causing error are calcification of the costal cartilages, false ribs, zones of condensation in the pores of the transverse processes, fragments of fractures of the transverse processes, exostoses of the iliac bone and calcareous deposits in the ischiatic spine.

Causes of error occurring in the arteries and veins include calcification at the bifurcation of the aorta, calcification of the middle third of large vessel and calcification of the anastomoses (Dondero has observed cases of calcification of the internal and external iliac arteries).

In the kidney and ureters causes of error in diagnosis include mucous renal tuberculosis, calcification of the suprarenal capsules, phlebotomies in the renal veins, calcification of the renal non calcified glands of normal consistency and calcified glands.

Causes of error in other part of the abdominal cavity include bilateral calculi, calcification of an aneurysm of the head of the pancreas, extra uterine pregnancy, calcified fibromyomas, calcification of the uterine vessels, calcareous deposits in the os.

ries, dermoid cysts, calcifying cysts of the broad ligament etc. opaque bodies in the digestive tract, calcified peritoneal and mesenteric glands, and calcification in the omentum.

In the diagnosis of vesical calculi errors may arise from foreign bodies in the vicinity of the bladder, intestinal calculi, calculi of the urethra and prostate or a dermoid cyst of the ovary. It is known that 90 per cent of bladder calculi may be passed undetected by the X-ray because of their slight opacity.

W. A. BAXMAN

Kretschmer H. L. Keratoderma Bleunorrhagica
J Am M Ass 93, lxxx, 903

Keratoderma is a very rare complication of gonorrhea. It occurs as a rule in the male and is characterized by three cardinal signs, viz. arthritis, urethritis, and hyperkeratosis. From the presence of these signs the diagnosis can be made readily.

The treatment should be directed toward cleaning up the focus of infection in the prostate gland and seminal vesicles by massage and irrigations or instillations. Arsine in the form of neo arsphenamine was used by Dobbo-Lee with good results.

Kretschmer gives detailed report of a case which recently came under his observation.

I. C. ROSENBERG, M.D.

Stern D. and Rypins, H. The Local Wassermann Reaction: A New Diagnostic Aid in Primary Syphilis. M. Assoc. Med. 93, vi, 67

A positive diagnosis of syphilis in the primary stage of the disease is based on: (1) the history of exposure with the time of occurrence and the duration of the lesion; (2) the appearance of the lesion and its association with satellite lymphadenitis or secondary eruption; (3) the Wassermann reaction of the blood serum; (4) the finding of the spirochetes with the dark field microscope; and (5) the local Wassermann reaction with which this paper is especially concerned.

A positive dark field examination is the most reliable aid in the diagnosis of primary chancre and in the hand of experts is positive in about 75 per cent of cases.

This test is made by collecting serum from the serum from the suspicious lesion in capillary tubes. The lesion is sponged off, the normal saline solution dried and squeezed. A small amount of blood will not interfere with the reaction. The collected serum is then diluted from 1 to 8, 1 to 6 and

1 to 32 when possible. The routine Wassermann test of the venereal division of the State Board of Health is performed.

In the authors series there were forty three cases of demonstrated primary syphilis, and five cases of non luetic lesions. These may be divided into the following groups:

Group 1: twelve cases with positive blood Wassermann reactions, positive dark fields, and positive local Wassermann reaction. Group 2: one case with positive blood-Wassermann reaction, a negative dark field examination, and a positive local Wassermann reaction. Group 3: twenty-nine cases with a negative blood reaction, a positive dark field examination, and a positive local Wassermann reaction. Group 4: one case with a negative blood reaction, negative dark field examination, and a positive local Wassermann reaction. Group 5: five non-syphilitic cases with a negative blood Wassermann, a negative dark field examination, and negative local Wassermann reaction. In the forty three cases the blood Wassermann was positive in only thirteen (30 per cent) and the dark field examination in 95.3 per cent, while the local Wassermann test was positive in 100 per cent.

Local treatment of the lesion with anti spirochete toxides will not interfere with the local Wassermann test.

The following conclusions are drawn:

1. The local Wassermann reaction, carried out on the surface sera of chancres in forty three cases of demonstrated primary syphilis, was positive in all cases. It was negative on the sera from five proved non luetic lesions.

2. Of these forty-three cases of primary chancre the dark field was positive in forty-one (95.3 per cent) and the blood Wassermann in thirteen (30.2 per cent).

3. Treatment of the lesion with anti spirochete toxides, even when the spirochetes have disappeared, does not interfere with the reaction.

4. When a dark field is not available or the examination is negative, the local Wassermann test is the only method of making a positive diagnosis of primary chancre.

5. The local Wassermann test is a simple and practicable procedure for the diagnosis of primary chancre, and the reliability of the results obtained is comparable with that of the findings obtained with a dark field microscope. JAMES A. H. MACGEE, M.D.

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Rasmussen, R. On the Diagnostic and Therapeutic Importance of Bone Typical Tender Bone Point. *Arch. Med. J. & Med. Soc.* 1911, vii, 3.

The attention of clinicians is called to the fact that many painful conditions are associated with typical bone point at the distal epiphysis of the humerus, of the radius, of the ulna, and of the tibia. The location of these points is as follows:

1. The shoulder: the pectoral deltoid insertion; the head of the radius in the elbow; the anterior end of the external lateral ligament of the humerus; the bone anteroside on the lateral tibial condyle and the head of the fibula; the bone at the tip of the malleolus in the distal space; and in the tibia the bone.

These bony areas that are often termed "tender bone points" are associated with various conditions and are often confused with arthritis and rheumatism.

The treatment has been successful consisting of a 1% injection of 1% per cent phenol into the tender bone point. *J. B. & N. M. D.*

Danesh, C., and Stitzel, G. The Diagnosis of Syphilis of the Diaphyses of the Long Bones. (*Le diagnostic de la syphilis diaphysaire des os longs*). *Arch. Med. Soc.* 1911, vii, 4.

Very frequently syphilitic lesions of the bones are diagnosed as metastatic tumors, osteitis, osteosarcoma, chronic osteomyelitis, etc. Therefore the authors contend that such diagnoses should not be made until the histological and bacteriological examination has excluded syphilis. Their report is a case of syphilis of the diaphyses of the long bones. There were as follows: gumma of the femur in an adult with hereditary syphilis; syphilis of the radius and ulna; ulcerous gumma of the tibia in a case of hereditary syphilis; syphilis of the tibia; syphilitic osteitis of the ulna; the epiphyseal fracture suggesting chronic osteomyelitis; latest syphilis of the radius; only 1 of these 5 the symptoms suggest a syphilitic lesion and most of them had been incorrectly diagnosed previously.

The authors state that the diagnosis of bone syphilis can and should be made from the clinical findings confirmed by the X-ray. The treatment should be early medical. *W. & B.*

Hartwich, A. J. Int. Med. (Berliner Medizinische Gesellschaft) 1911, xii, 1.

The author made histologic study of several joint mice obtained from three patients. In two cases there was history of injury and the joint

was still contained. It preserved particles of cartilage. In the third case there was no trauma or arthritis deformans. Although the author was unable to find any granulation tissue in the joint mouse in this instance, he believes that osteochondritis deformans has been present previously and had healed at the time of operation.

V. & B. (2)

Kallman, T. The Anatomical Structure of Human Joints. (*Über den anatomischen Bau der menschlichen Gelenke*). 1911, vii, 35.

Autopsies performed on 1 case from the Leipzig Surgical Clinic in which, one month ago and one year ago respectively, 1 yr old child an arkylosed elbow joint made possible an accurate study of the formation of ankylosis. The observations had shown that in the first stages of ankylosis there is a process of formation in which degenerative processes predominate, particularly in the transplants, but that later the degenerative processes are supplanted by constructive processes which lead to the formation of joint. In both cases studied the humeral end of the joint was covered with a 1% flap with the 1% uric acid being against the ulnar end of the joint. The head of the radius was resected and another 1% flap interposed between the radius and ulna.

In the case operated on one month ago the middle flap showed marked degenerative process with the beginning formation of cartilage while the peripheral flaps had been partly replaced by connective tissue rich in cells. A organic relationship between the transplants at the ends of the bone as every here in evidence.

In the second case the joint ends were covered with a 1% thick 1% transverse and there was well formed joint cartilage. The joint surfaces consisted of firm, fibrous connective tissue. A cartilaginous metaplasia as not observed. The inner surface of the capsule had everywhere undergone change into a fibrous membrane. The new joint had all the mechanical and functional characteristics of a normal joint. *W. & B. (2)*

Laeth, W. A Contribution on So-Called Myositis Ossificans Progressiva. *Die Myositis ossificans progressiva*. *Deutsche Zeitschrift für Chirurgie* 1911, xii, 38.

The disease under discussion attacks only persons who are under 30 years of age and without hereditary talent, and occurs more frequently in males than in females. Frequently the ossification of the muscles begins early. The first symptoms are gradually developing vague rheumatic pains localized chiefly in the neck and back between the

scapulae. Sometimes acute painful swellings form under the skin. Usually there is no increase in the temperature but in some cases there may be slight fever (up to 38.5 degrees C). The subjects are regarded as weaklings and are generally backward. A curious characteristic of the condition is a very large percentage of cases is microdactylia of the thumbs and great toes. The disease spreads almost symmetrically especially in the deep neck and back muscles along the spinal column on both sides. In advanced stages even the muscles of mastication are involved, the resulting trismus seriously interfering with nutrition. The heart, diaphragm, larynx, the peroneal muscles, the muscles of the genital apparatus, the eyes, tongue, recti, biceps, and the peripheral aspect of the arms and legs are seldom affected. The disease progresses slowly usually with intermissions, and causes death through inanition or phthisis. Recovery and an absolute stationary condition are rare.

Research with regard to the etiology has been without result. Treatment is generally futile, but recently improvement under roentgen irradiation has been reported.

The author gives detailed description of the case of a man of 20 years. In this case specimen of bone was removed under local anesthesia and examined. The pathological anatomical development of the entire process is explained as follows:

First, a proliferation of the connective tissue occurs. This causes edema through obliteration of the blood vessels, and hyalinization of the intercellular tissue through change in the metabolism. The hyalinization furnishes the basis for the calcification and the latter is followed metaplastically by true ossification. **LOEWENSTAMM (2)**

Contracture. A Case of Traumatic Cubitus Varus (U cas de cubitus varus traumaticus) *Rev. Chir.* 9, 3, 1912, 6

Under the name cubitus varus has been designated deformity of the elbow in which the axis of the forearm forms with that of the arm an angle opening in and instead of out as normally. Contracture reports the case of a man aged 25 years who at the age of 6 years, fell from a height on his left side and broke his left elbow.

There are two theories of traumatic cubitus varus, the osteogenetic theory and the theory of vicious consolidation. According to the osteogenetic theory the deformity is due to the fact that the fracture of the external condyle broke from above downward and from without inward, does not involve the cartilage in its external part but involves it internally about the trochlea. Therefore there is unequal growth of the trochlear and condylar portions of the inferior extremity of the humerus, the hypertrophied condyle is displaced beneath the level of the trochlea, and the line of rotation of the elbow passing through these two articular eminences becomes oblique down and out and up and in. **W. A. BARNES**

Michelson, F. Primary Infectious Osteomyelitis of the Ribs (Fungus Osteomyelitis zur Frage der primären infektiösen Osteomyelitis der Rippen) *Arch. f. klin. Chir.* 19, 1911, 3, 4

Purulent osteomyelitis of the ribs is a well defined pathological anatomical and clinical entity constituting about 1 per cent of all cases of osteomyelitis. Although it is often found in elderly persons, it must be considered a disease closely associated with the growth and formation of the vessels in the ribs. The clinical differences between osteomyelitis of the ribs and that affecting the long bones are due to the hidden location and anatomical peculiarities of the former. In most cases the onset is sudden, with chills, fever and aporexia; in severe cases there is coma or delirium. Locally there is often only a dull chest pain which is increased by movement of the body and deep respiration. Later there is abscess formation on the chest wall or on the back, depending on the location of the focus.

In the differential diagnosis, diseases of the lungs and pleura can be ruled out by means of the X-ray. In subpectoral lymphadenitis the axillary glands are involved and the pain on bending, which is characteristic of osteomyelitis of the ribs, is absent. In chronic fistulous cases, syphilis, tuberculosis, and typhoid must be considered.

The treatment is surgical, and operation should be performed as soon as possible. **RAESCHKE (2)**

Lupo, M. Development of the Upper Vertebra and Occipitalization of the Atlas (Manifestazione di eretismo occipitale od occipitalizzazione dell'atlante?) *Chir. d. organsi e movimenti* 9, 1, 6, 5

In the terminal vertebrae of each segment of the spine there is a peculiar instability of formation by virtue of which vertebrae may be abolished or developed. The morphology skews that of the contiguous segment. Anatomists have long studied these facts, but the introduction of the X-ray has helped in their clinical demonstration. We have been taught to accept the possibility of two different regional heteromorphoses of vertebrae: a caudal development and a cranial development in the group caudal to the skull.

The vertebral theory of the formation of the skull has been very generally accepted. Anatomical and embryological research has attempted to demonstrate the segmentation of the occipital bone in particular. In proof of the segmental tendency of the bone to approach a form like that of vertebrae caudal to it certain demonstrated anomalies have been cited, viz. (1) transverse or paracondyloid processes on the occiput, (2) basilar processes, (3) a third condyle, (4) ossification of the respiratory ligament of the axis, (5) an articular facet on the anterior border of the foramen magnum, (6) raised lip on the foramen magnum, and (7) subdivision of the hypoglossal canal.

The author attempted with roentgenograms to standardize the hitherto unexplained shadows in the occipito-atlas region in the light of the anatomical

findings mentioned. Both lateral, antero posterior (through the mouth) and oblique views of this region are used.

Five cases with occipito atlantoid anomalies are reviewed in detail. The first, which may be cited as an example was characterized by a brachiocephalic head, cervico dorsal scoliosis, torticollis, asymmetry of the face and marked limitation of the movements of the neck. The patient was a 23-year old girl whose father and mother are living and well. The family history was negative as regards deformities. The patient's birth had been normal and she had had no illnesses. She came for X-ray examination for suspected suboccipital Pott disease. This was believed to be the cause of the torticollis, but had been present since infancy.

The X-ray showed high grade occipital assimilation of the atlas. The three adjacent cervical vertebrae were fused into one mass. Partial basal segmentation of the odontoid, dorsification of the seventh cervical vertebra and deformities in the dorsal lumbar spine were found. All traces of free atlas were wanting.

The author concludes from his investigations that a revision of this entire subject is necessary, as his observations indicate that in the published cases there is no proof of the development of occipital vertebrae and the anomalies should be interpreted as due to occipital assimilation of the atlas.

ARLICO SERRA, M.D.

Negru, D. Three Cases of Sacralization of the Fifth Sacral Vertebra (Drei Fälle von Sakralisation des fünften Lendenwirbels). (Cajal and 9 ill., 49)

As a rule the pain in cases of sacralization of the fifth sacral vertebra is attributed to spondylitis, arthritis of the spine or simple neuritis. To determine the true cause an X-ray examination is essential. For this, the patient performs should be raised.

Negru reports three cases in which the spinous processes were hypertrophied, partly symmetrical, partly asymmetrical, and were grown to the iliac and sacral bones. Before the X-ray was used the condition was believed to be spondylitis.

According to American and French investigators, the pain associated with sacralization of the fifth sacral vertebra is caused partly by compression, friction, or traction of partly by pressure on the fifth lumbar nerve. The treatment Negru has found that the roentgen ray gives excellent results.

PETROV (2)

Leonstjerna, L. Spondylitis in Children (Spondylitis bei Kindern). *Verhandl. d. Russ. Chir. Protop.* Ges. Petrograd, 9

Since 1909, 5 cases of spondylitis in children have been admitted to the hospital with which the author is connected. Fifty-five of the patients were between 5 and 5 years of age and fifty between 5 and 15. In 36 per cent of the cases, most of

them thoracic cases, there are cord symptoms, and in 64 per cent most of them lumbar cases, there are cold abscesses. Fourteen of the patients died in the hospital.

The Albee operation was seldom performed. Subjective symptoms were usually easily alleviated but in one case severe pain and limitation of motion developed one year after operation and there was marked lordosis below the transplant. A back held the second lumbar vertebra. The roentgen picture revealed fan-shaped gaping in front of the vertebral body. In addition there was decrease in body length. Improvement resulted from rest, extension, and massage.

Weber describes the dropping out of a symptom of spontaneous loosening of the body, edge split from the spinous process of the third lumbar vertebra. It is opposed to the Albee operation in early childhood.

In the discussion of this paper Wreden stated that he makes curved incisions through the spinous processes, but does not use the chisel. The bone splint is laid in a shallow cavity made the spinous processes to concave congruent. Bony union cannot be expected for months, and until it is obtained, eight bearing must be prevented.

Smirnov mentioned the case of a 5 year old child with paresis of the lower extremities. He became completely paralyzed after the Albee operation. A costovertebral fracture by Alendard's method with curetting of granulations brought about improvement.

Schuck stated that present conditions in Russia justify the frequent performance of the Albee operation because it does not give the best cure and general treatment. Special treatment in sanatoria, however, improves the result.

Koroff in summing up, placed the mortality in cases operated upon at 4 per cent and in cases treated conservatively at 7 per cent. According to Petrograd statistics good results were found after two to three months in 9 per cent of the cases.

VOYKO, OTTEN, SACHAROFF (2)

Dachowskij, S. M. Traumatic Spondylitis (Über traumatische Spondylitis). *V. Chir. Arch.* 9

373

Since Kuemmel in 1880 first described peculiar type of traumatic spondylitis, Kuemmel disease has been the subject of much discussion. Kuemmel described the condition peculiar relieving osteitis of the vertebrae. During the war these cases increased in number. Of 500 patients with injuries to the spinal column, he proved through the Traumatological Institute, 181 had diagnosis of traumatic spondylitis. In the literature the author could find only thirty-five cases. In this article he reports ten typical histories from his own large material.

Clinically two periods can be distinguished the first characterized chiefly by acute symptoms of contusion and injury to the back, and the second

by deformity of the spinal column. Prominence of a vertebra is not noted before four to six months or even later. In 80 per cent of the cases reviewed the twelfth dorsal and first lumbar vertebrae were affected. As rule the trauma was direct heavy impact or fall on the back. The treatment consists of extension the use of plaster jacket for 18 to 24 months, and the use of a removable leather corset for not less than a year. SCHWARTZ (Z)

Mouchet, A., and Roederer, G. Some New Ideas with Regard to Congenital Scoliosis (Quelques notions nouvelles relatives à la scoliose congénitale). *Rev d'orthop* 9 3, xxx, 9.

Congenital scoliosis may be classified clinically as scoliosis noted at birth and scoliosis manifested later. Scoliosis visible at birth includes scoliosis with and without apparent bone anomalies. The latter which is the more common, includes scoliosis with supernumerary half vertebra. The supernumerary half vertebra is often found to the left of the lumbar region and between the first and second lumbar vertebrae.

Scoliosis due to unilateral atrophy of one vertebra is manifested late. That which is associated with a hemisacral malformation is rather common but is almost the latest to appear.

In conclusion the authors emphasize the importance of bearing congenital scoliosis in mind in dealing with so-called essential scoliosis.

W A BARNES

Serantis-Papadopoulos, A. Can Fixed Scoliosis Be Cured? The Value of Abbott's Method (La scoliose fixée peut-elle? Sur la valeur de la méthode d'Abbott). *Rev d'orthop* 9 3, xxx, 35.

The author gives critical review of the treatment of fixed scoliosis, discussing in particular the Abbott method. Abbott method can effect cure only when the scoliosis is easily reduced, the spine can be hypercorrected and the treatment can be continued for from several months to several years.

Abbott method is the only rational method and the only procedure which can cure true scoliosis of medium severity. Spontaneous recovery from scoliosis is now considered impossible as cases of such recovery which have been reported were found to be only cases of false scoliosis or scoliotic attitudes which tend toward spontaneous cure. In true scoliosis there is aggravation of the fixation. In time Abbott method all undergo further modifications which will make it less severe.

W A BARNES

Brown, A. Hydatid Cyst of the Hip Bone (Sobre un caso de quiste hidatídico de hueso coxal). *Rev Assoc med argent* 9, xxv, 750.

Hydatid cysts occur rarely in the large bones. Of thirty seven cases of cysts in the pelvic girdle collected by Landivar twenty three were fatal, nine were cured, and the result in the others was unknown. The parasite may remain latent in the bone

for a long time until pain or an injury forces the patient to seek aid. There are three types of cyst, the unicellular the multilocular and the alveolar. The most common is the multilocular. In the spongy tissue of the bone this causes lesion characterized by the infiltration of small vessels which in their development, produce a true death of the spongy tissue with the formation of sequestrum and ultimately of bone becomes which invade the neighboring organs and end in surface ulcerations and fistulae.

The author reports the case of a man of 35 years who had multilocular macrocystic cysts. The condition began five years previously but its evolution was hastened by an injury occurring later. The abscesses opened spontaneously through several fistulae which discharged purulent fluid and hydatid membranes. The X-ray showed that the lesion invaded the internal table of the ilium and the hip joint. At operation the hip bone was found almost completely destroyed. The patient died a few hours later.

W A BARNES

Waldenstrom, H. On Coxa Plana. *Acta Orthop Scand* 9 3, 577.

Waldenstrom claims that he and Legg deserve priority in the description of coxa plana. They described this disease of the hip in 1909 and it was not until 9 years that studies were written on this subject by others.

The etiology is still uncertain.

Since observing his first case in 1907 Waldenstrom has followed the course of forty cases clinically and with the X-rays. The condition seems to have a definite course of from five to six years. Its stages are given as follows:

1. The evolutionary period (a) the initial stage lasting from one half to one year (b) the fragmentation stage lasting from two to three years.

2. The healing period, lasting from one to two years.

3. The growing period, lasting until growth is completed.

4. The stage after growth is completed.

The end results appear to be the same in both the treated and the untreated cases, but traction appears to be indicated in the earlier stages when the head and neck are soft. If pain and contractures are present immobilization is necessary. Open operations are contra-indicated.

E J BERKMEYER, M D

Koenig, F. Internal Injuries of the Knee Joint (Binnenverletzungen des Kniegelenks). *Therap d Gegenwart* 93, hsm, 448.

The author reports seventeen cases of internal injury of the knee joint observed during the last ten years. Twelve, the menisci were affected. The force need not be considerable, two of the patients were not aware of an accident. Objective clinical symptoms also may be totally missing, only atrophy of the quadriceps confirming the complaints.

The interpretation of the X-ray picture is often very difficult. A ruptured crucial ligament and defects in the surface of the cartilage can perhaps be recognized with certainty, but the nature of the meniscus injury is often impossible to determine. In the diagnosis the contrasting picture obtained after filling the joint with oxygen or filtered air has proved of value. The author has not been able to make up his mind to use arthro endoscopy after the method of Burcher.

In the cases reviewed the operation often revealed other lesions besides the chief one who is by the X-ray. In one case it disclosed, besides the meniscus injury, longitudinal tear in the anterior crucial ligament with the formation of a node in one part. In several cases longitudinal tears were found on the free surface of the femoral condyle.

The operation was usually performed under local anesthesia. To open the joint a lateral transverse incision is often sufficient. In other cases, a lateral longitudinal incision is indicated, especially when the pain is higher up in the capsule. Tension's incision covering the patellar ligament in front has also been used. Even severance of the lateral ligament may be considered.

The result of the operation is very good when careful after treatment with hot or cold massage, movement and gymnastics is given. The author has never attempted to suture a torn meniscus. According to the findings of Burcher in ninety three cases and of Baumann in six, the danger of arthritis deformans after partial or complete removal of one or both menisci is merely theoretical. In no case of the lateral ligament or the patella does not influence the final result. It is of importance that the operation be performed before stiffness or arthritis deformans has developed. HARRIS (22)

Nord-Jensen. Anatomical Types of Flat Foot (Former anatomiques du pied plat). *Rev. d'orthop.* 9, 3, xxx, 7.

The X-ray has shown that there are different anatomical types of flat-foot. Some are characterized by a certain displacement of the astragalus, others are congenital, while others show the presence of a calcaneo-scapheoid synostosis.

Simple flat foot studied roentgenographically, shows three characteristics: (1) a modification of Chopart's joint, (2) encroachment of the head of the astragalus and the scaphoid on the calcaneum and the cuboid, (3) obliteration of the astragalo-calcaneal joint and change in the shape of the small phalanges.

The most marked roentgenographic characteristic of congenital flat foot is inclination of the astragalus, this bone being disposed almost vertically and its axis making an angle of between 70 and 80 degrees with the tibia. The calcaneum is also inclined downward, while the scaphoid and the cuboid have a tendency toward upward subluxation.

Cases are known in which flat-foot is associated with anomalies of the skeleton of the foot. The

most frequent malformation of this kind is abnormal ossification uniting the calcaneum to the scaphoid. In about 1 per cent of the cases there is a small supernumerary bone between the scaphoid and calcaneum. In rare cases this bone may attain a much larger size and may be united to either the scaphoid or the calcaneum. It is believed to be congenital. The association of this calcaneo-scapheoid synostosis with flat-foot has been noted by many surgeons and recently Sjoemann of Copenhagen has reported four cases. In this article Nord-Jensen reports 11 cases in which the anomaly was present in both feet but the flat foot was unilateral.

In flat foot associated with calcaneo-scapheoid synostosis the bone displacements are much less marked than in ordinary cases of flat foot although clinically the deformity may be much greater. As tarsalgia is almost present, Nord-Jensen considers it probable that the flat-foot is the result of reflex contraction of the peroneal and levator muscles due to the pain. W. A. BARNES.

Sorstäng. Contribution upon Kockler's Disease of the Head of the Second Metatarsal (Beitrag zur Kockler'schen Krankheit des zweiten Mittel-Metatarsalköpfchen). *Monatshefte und Nachsch. 1931*, 34, 307.

Ten to six cases are described by the author. Almost always the second metatarsal head is the seat of the disease, the third is affected very seldom. The condition occurs most frequently during the period of growth in females and on the right side. Subjectively there is pain. Of diagnostic value in the diagnosis is the X-ray picture which shows shortening and broadening of the metatarsal head and changes in form and structure culminating in degenerative form. In the differential diagnosis metatarsalgia, flat foot (subtalar) and primary arthritis deformans must be considered. The histologic findings of Froese and Axhausen showed no evidence of rickets, tuberculous epiphysis, or osteomyelitis.

The slow development of the disease argues against purely traumatic origin in no case is primary fracture responsible. Perhaps the condition can be classified with Schlatter's or Perthes's disease. Improperly fitting shoes and hereditary tendency to flat and broad foot may be other factors. During the period of growth there is preliminary idiopathic necrosis of the epiphysis. Conservative treatment is recommended. SCHMIDT (23)

Banco, P. Some Details in the Disposition of the Plantar Fascia (Sopra alcune particolarità di disposizione della fascia plantare). *Pedidia*. Rome 9, 3, xxx, see also.

Hering found many discrepancies in the classical descriptions of the disposition of the plantar fascia, the author made a careful study on the cadaver. His findings were as follows:

From the deep surface of the superficial plantar aponeurosis two septa arise, the first or medial or

which is inserted on the inferior surface of the calcaneum, the navicular the first cuneiform, and the lower lateral surface of the first metatarsal, and the second or lateral 1 which is inserted on the lower lateral surface of the calcaneum the large calcaneo cuboid ligament, the crest of the cuboid the sheath of the peroneus longus muscle the lower lateral surface of the first metatarsal, and the infero lateral surface of the third metatarsal. Therefore, besides the three regions mentioned in the classical description, these septa delimit another small region which contains the last two plantar interossei. The arteries and nerves on the sole of the foot are covered by the septa, the internal by the medial septum and the external by the lateral septum.

The deep plantar pocrucous is enlarged by the inferior part of the first and by the third metatarsal, and merges with the septa described.

W A BURN

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

Kaplan, A. D. Anesthesia of the Brachial Plexus (Ueber Anästhesie des Plexus brachialis) *Vierteljahrsschr. Anat. u. Phys.* 9, 24, 1911

The anesthesia proposed by Kulenkampf in 1905 is employed but little in Russia but is worthy of more general use. The technique of the procedure is described. The author successfully induced anesthesia by injection into the brachial plexus in thirty-two cases for procedures such as the reduction of luxation of the shoulder, resection, amputation, and sequestrectomy. In two cases the anesthesia was insufficient, but secondary injections were made and the operation was then completed without general anesthesia.

The complications worthy of mention which may occur during the injection are perforation of the subclavian artery and of the dome of the pleura. The former is entirely harmless if blood flow from the needle, the needle must be withdrawn thereupon the slight opening in the blood vessel will close immediately. Injury of the pleura frequently causes pain and possibly dyspnea. In such cases morphine is of value. The author was compelled to use morphine twice.

Plexus anesthesia is contraindicated by diseases of the plexus itself, certain nervous conditions, and suppurative processes in the subclavian region also in the cases of children. SCHWAB (Z)

Schnee, A. Snapping Finger (Zur Frage des schneidenden Fingers) *Wochenschr. f. Chir.* 9, 2, 4, 1911

In the case reported slight injury of the fourth finger six months previously had been followed by uneventful recovery. Several months later flexion of the finger became disturbed and painful, an obstruction appearing which could be overcome only passively. Accompanying this disturbance faint grating could be heard, and the snapping of the tendon over the obstruction could be felt plainly.

Operation disclosed evidences of an injury to the tendon of the flexor digitorum sublimis and a inflammatory swelling at this site which produced the picture described as it slipped through the narrow tendon sheath. Restoration of function was complete 1 month after the operation.

1 HOUR (Z)

Splaw, B. The Operative Treatment of Tuberculous Spondylitis (Ueber die operative Behandlung der Spindylitis tuberculosa) *Lydsk. Versk.* 9, 21, 1911

This is a report of five cases of spondylitis which were operated upon in the Agram orthopedic hospital by Albee's method. The author recommends that the surgeon adhere rigorously to the indications for operation and operate as little as possible especially in the cases of children. There are certain conditions under which operations cannot be considered viz. during the acute stages of the disease cases in which a fistula or abscess situated near the field of operation would make asepsis impossible, cases with suppuration in which there are signs of amyloid degeneration cases with tuberculous involvement of other parts, such as the lungs, the cases of small children who cannot be kept clean and, finally cases with marked gibbus or severe paralysis.

The cases operated upon by the author showed good ossification. In four the condition was greatly improved, the pain was relieved, and the spasms became less frequent or ceased entirely. In one case of severe paralysis there was no improvement.

The author approves of the combined treatment of surgical tuberculosis, and believes that radical measures should be used only when the conservative method is not practicable. After operation the patient should be kept in plaster of Paris cast for twenty-four months for immobilization of the spine, and after that should wear an orthopedic corset. The general health must be improved as much as possible and return to the living conditions which originally caused the sickness must be prevented.

SEITZ (Z)

Fraenkel, J. Lodioff's Operation for Hallux Valgus and Hollow Claw Foot (Zur Operation Lodioff bei Hallux valgus und Hohlballen) *Zentralbl. f. Chir.* 9, 21, 745

Fraenkel calls attention to the ideal results of Lodioff's operation which has the advantages of a wedge-shaped osteotomy in addition to those of operation on the first cuneiform bone and a kls division and lengthening of the tendon. In slight cases, the first stage of the operation, dissection of the pedunculated flap of the soft parts and removal of the medial exostosis, is sufficient. From his experience in sixty-four operations, the author draws the following conclusions:

In the removal of the exostosis it is better to excise too widely than not widely enough. In suturing the flap should be drawn snugly laterally and

toward the plantar region with the proximal joint somewhat overextended.

Shortening of the first metatarsal by Ludloff's method also gives very good relaxation of the muscles of the great toe in hollow claw foot. In two cases the author obtained very good results by supplementing it with plastic lengthening of the Achilles tendon. Division of the flexor longus digitorum tendons and of the adjacent capsular ligament is added when necessary. VOLLMERST (X)

FRACTURES AND DISLOCATIONS

Grovesman, J. Fractures of the Head and Neck of the Radius. *New York M J & Med Rec* 9 3, 1934, 47

The author reports a series of 190 fractures of the elbow in which there were sixteen fractures of the head or neck of the radius, or of both, and points out that the latter condition is more frequent than is generally recognized.

He recommends reduction, immobilization with the elbow in acute flexion, and early baking. Motion should be delayed until the fluid has disappeared from the radio humeral fold.

When the fragments are too small or the fracture is so gross that conservative treatment is impracticable, operative interference is necessary.

DREWES W. CAUSE, M.D.

Kleinberg, S. Spondylolisthesis. *Ann Surg* 9 3, 1934, 440

Spondylolisthesis occurs more frequently in males than was heretofore believed. The lesion presents a roentgenographic appearance that is pathognomonic. Trauma is a very important factor in the etiology.

Normally the body of the sacrum is tilted forward in the transverse plane. The fifth lumbar vertebra is also tilted so that its upper surface is directed upward and forward. There is a close relationship, the vertebra being held in place only by its ligamentous attachments. The X ray picture of the normal sacrum shows the body of the fifth lumbar to be quadrilateral in shape and with a definite interval between its base and the body of the sacrum. In antero-posterior roentgenoscopy it is important whether the exposure is made with the tube at the lumbar or at the dorsal space.

The picture in spondylolisthesis shows the fifth lumbar vertebra to be dislocated forward so that as a front view one sees its upper surface and the anterior surfaces of the rest. The shadow of the last lumbar vertebra will then show the body, the transverse process, lamina, spinous process, and spinal foramen. A lateral view will show the dislocation very plainly but this is sometimes difficult to obtain in the cases of large and fleshy persons.

The author has recently studied eight cases, one of which was that of a girl and the remainder those of adult males. In all the adult cases there was

clear history of trauma preceding the onset of the symptoms. There is probably some developmental defect affecting the ligamentous structures and predisposing to dislocation, but trauma seems to be the chief etiological factor.

WILLIAM J. PICKETT, M.D.

Bejral, A. P. Fractures of the Pelvis (*Die Frakturen Beckenfrakturen*). *Yearb Clin Arch* 1933 4, 351

Generally speaking, fractures of the pelvis have received little attention. Clinical observations are insufficient and studies on the cadaver have not clearly explained their mechanism. Statistics regarding their incidence vary greatly. Garlin claimed that they constitute 0.31 per cent of all fractures, and other authors estimate their incidence as high as 2.93 per cent while according to the material of the Moscow hospitals it is only .3 per cent (Drachman).

They are caused not only by direct heavy trauma, muscle traction is also of importance. The author has collected ninety seven cases from the literature and in this article reports 120 of his own. One of his cases was that of a woman 50 years of age who was injured by an automobile, suffering

vertical fracture of the humerus and other injuries. Death occurred one and one half hours after the accident. The second case was that of a 35-year-old woman who was injured by a street car. A diagnosis of symmetrical fracture of the anterior pelvic ring with forward dislocation of the right hum was made. The X ray showed fracture of the left ascending ramus of the pubis and fracture of the horizontal ramus of the ischium with splintering and dislocation of the right ilium. The treatment consisted in extension with weight on the right leg and 3 lb weight on the left. Measurements of the pelvis after fourteen days showed decrease in the dislocation. The patient recovered and was able to walk after three months.

The author considers extension a very efficient method of treating fractured pelvis. Periodical measuring and X ray examinations are important. Massage and exercise may be begun in the first weeks. Bed rest for eight to ten weeks is necessary. The prognosis is poor. In the ninety seven cases collected from the literature the mortality was 33 per cent. SCHEARS (X)

Charrier. Congenital Luxation of the Hip in Hemiplegic Girl (*Luxation congenitale de la hanche chez une fillette hémiplegique*). *Rev d'orthop* 9 3, 1933, 55

Charrier reports the case of a 7 month old child with luxation of the left hip and hemiplegia of the left side. In Charrier's opinion the hemiplegia as well as the ordinary infantile paralysis type, and the hip luxation was merely an ordinary congenital luxation in a hemiplegic child. In 100 congenital luxations he had not observed any similar case.

W. A. BRIDMAN

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

McGaire, E. Mesenteric Thrombosis, with Report of Two Cases. *Vergam's M. Month* 923 1, 3

Two cases of mesenteric thrombosis with subsequent recovery after the removal of 7 ft. 4 in. and 4 ft. 6 in. of small intestine respectively are reported.

In acute cases the onset is rapid with abdominal pain which is at first colicky but later continuous. Often the pain is agonizing and associated with shock. If diarrhea is present, it is watery and frequently blood stained. If constipation is present, it is absolute. The abdomen is at first soft, flaccid, and not painful, but with fever of 104 or 105 degrees, may later become stiff and distended.

The diagnosis is extremely difficult, few cases being recognized before operation or autopsy. When the abdomen is opened, dark, bloody fluid escapes and the distended black coils of intestines are usually found in the pelvis or lower abdomen.

The operation of choice is resection and anastomosis, but it may be best merely to bring the cut ends of the bowel out of the wound.

MARCUS H. HOBART, M.D.

Olbrycht, J. Fat Embolism. *Polish per M.* 9, 4 p. 408

The object of this article is to point out the importance of fat embolism to medical jurisprudence and to state the author's position with regard to certain details related to this question. The material reviewed consisted of 283 cases of fat embolism in which the author confined himself exclusively to examination of the lung. The discussion begins with the premise that after passing through the heart, the fat usually lodges in the capillaries of the lung and in but few instances reaches the systemic circulation to cause embolism in the brain, kidneys, heart, liver and other parts. To stain sections, Olbrycht uses Sudan III. Microscopic examination is essential as the lungs may appear entirely normal macroscopically in spite of numerous emboli, or it may show only slight edema and hyperemia on the cut surface.

In table the author shows that the most common and extensive fat embolisms are found after injuries to the long bones (in nineteen of twenty-two cases). In injuries to flat and short bones fat embolism is much more rare. Fat embolism seldom occurs in cases of fracture of the base and vault of the skull or the ribs. It is found in 50 per cent of the cases of injury to the abdominal wall but is rare when the internal organs are injured. Neoplasms and poisoning do not cause it. The author has found fat embolism after death from burns. He concludes that the degree of the burn is of more importance

than its extent. In cases in which a considerable period of time elapsed before death, fat embolism could not be demonstrated. JURANS (2)

BLOOD AND TRANSFUSION

Mauriac, P., and Mourou, M. The Mechanism of Variations in the Number of Leucocytes (Les variations du nombre des leucocytes, leur mechanisme). *J. de med. de Bordeaux* 93 XIV 39

Variations in the number of leucocytes are explained in part by the unequal distribution of these cells in the peripheral and central circulations. It is probable that frequently this distribution is governed by vasomotor reactions.

Leucopenia may be caused also by an increase in the fragility of the leucocytes. In leucocytosis there is an increase in their resistance to osmotic increase of activity of the leucopoietic centers.

Many factors have a part in variations in the leucocyte count, but in presence of a leucopenia it is difficult to determine the responsibility of each. Leucopenia and leucocytosis may be the result of very different causes, and when they are found in anaphylactic shock, an attempt to explain them on the basis of differences in the concentration and the rate of flow of the blood is erroneous.

W. A. BRIDGMAN

Halbertsma, T. Concerning the Quantity of Blood Administered in Blood Transfusion (Ueber die Dosis des Blutes bei Bluttransfusionen). *Nederl. Tijdschr. Geneesk.* 9, lvi, 7

In blood transfusion success depends upon various details. It is known that in most cases the number of red corpuscles per cubic millimeter is increased after blood transfusion, but investigators who are inclined to consider this a constant rule will find that in number of cases a diminution first takes place. This is especially true in diseases in which the blood-forming organs are affected.

In the investigations the author reports he sought to establish the fact that the change in the number of red blood corpuscles depends in the main on two factors: (1) the body weight and (2) the quantity of blood transfused. He found that in general an increase of about one million red blood corpuscles depends upon the transfusion of about 5 cm. per kilogram of body weight. KOCK (2)

LYMPH VESSELS AND GLANDS

Thompson, J. E. and Koffler, V. H. Lymphatic Glands of the Neck. *A. Surg.* 93 LXVII, 343

The etiology and pathology of lymphangoma is briefly discussed and two cases are reported.

Case 1. The patient was a white male infant 13 months old who presented at birth a small tumor on the left side of the neck about on a line with the hyoid bone. At the age of 1 day the tumor was removed. Edema of the face and lips on the same side then appeared and the tumor recurred in a few weeks.

Complete dissection of the tumor was then done. Paralysis of the tongue which followed the operation, cleared up completely within six months, but there was still some edema of the face and upper lip after this time. It seemed probable that there was also a diffuse lymphangiomatous condition. The pathologic diagnosis was lymphangioma with an excess of blood vessels.

Case 2. The patient was a white female aged 5 years. A tumor on the left side of the neck, first noticed four weeks previous to the examination, had grown steadily. At operation a multilocular cyst was removed. Recovery followed. The diagnosis was hygroma (multilocular lymphatic cyst of the neck). Two years later there was no recurrence.

From the point of view of the surgeon, the chief facts of interest in these tumors are that like most embryonic growths, they are primarily benign, and rapid growth does not indicate malignant transformation. They may and frequently do, contain a large hemangiomatous element. In all cases, and especially in the cystic forms, they are more deeply situated than a superficial inspection would suggest and their deep relations and extensions follow certain definite lines predetermined by their embryonic origin. Excision is the logical method of treatment.

CAR R. STERN, M.D.

Mottram, J. C. Some Observations upon the Histologic Changes in Lymphatic Glands Following Exposure to Radium. *Am J M Sc* 93, 479-489.

The following observations are concerned with the histologic changes in the iliac glands of the rat following the exposure of the entire animal to the radium from radium.

The author first gives a brief description of the normal gland. The afferent lymphatics open at the surface of the glands while the efferent leave centrally in the hilum. The center of the gland is occupied by irregular areas of plasmacytoma which are grouped around blood vessels and separated by lymphatic channels. The exact nature of these cells is unknown. Maximow calls them plasmacytoma and they are so called in this article.

Cellular masses of lymphocytes are found centrally located and grouped around blood vessels. Just within the capsule of the gland are groups of lymphocytes quite distinct from those centrally located. Around the margin are follicles consisting of circular collections of macrophages. Marginal lymphocytes are found around the outer half of these corpora, but at the inner side they are scanty or absent. Dividing cells are seen only in the follicles and among the plasma cells and have never been dis-

covered in either marginal or central lymphocyte groups. The cells of the follicles are generally accepted as the mother cells of the lymphocytes but several facts are given by the author to refute this argument.

In an experiment along this line the right iliac glands of 24 rats were removed and during the succeeding eight sufficient beta and gamma radiations were given to cause marked disappearance of lymphocytes from the circulation. The left iliac glands were then removed for examination. It was found that a vast increase in the marginal lymphocytes had occurred in each case, about any increase in mitosis in the cells of the follicles. These lymphocytes presented degenerative changes. Control animals showed no such changes.

Cells of the follicles show cell inclusions and it is now certain that phagocytosis of lymphocytes goes on within them. In describing all stages from inclusion of lymphocytes to its final disintegration are shown. This phagocytosis is absent in the absence of marginal lymphocytes and abundant when marginal lymphocytes are numerous, especially after radiation. The plasmacytoma occupying the central portion of the gland are undergoing mitosis, and it is concluded from reasons given by the author that they give rise to lymphocytes by their division. Prolonged exposure to radiation not only destroys great numbers of lymphocytes but also inhibits the formation of new ones. This inhibition is accompanied by an increase in plasmacytoma.

After exposure to gamma ray for twelve days the marginal lymph glands were found to consist almost wholly of plasmacytoma. Facts are given showing that the cells of the follicles can be traced through the plasmacytoma, every intermediate stage being noted. Under conditions of heavy radiation lymphocytes in various stages of degeneration are found in cells of the follicles and in the endothelial cells of the lymphatics and the blood vessels. Evidence of the close relationship between cells of the follicles and endothelial cells is seen in the fact that all gradations between them can be found, and it is concluded that the difference is only qualitative. The presence of many young lymphocytes in the efferent lymphatics is strong evidence that this is their means of exit, but their presence in the endothelial lining of the blood vessels indicates that this is an alternative exit.

The conclusions drawn by the author are summarized as follows.

Lymphocytes enter the glands by the afferent lymphatics and are devoured by the endothelial cells. These cells then gradually change into follicle cells and increasing in numbers by cell division, they next become converted into plasmacytoma. The plasmacytoma divide into lymphocytes, which leave the gland by the lymphatics or possibly by the blood vessels. The lymphocytes which follow exposure to the roentgen ray does not correspond in point of time to the increased mitosis in the follicles, the latter preceding the lymphocytes sometimes by many days.

A. JAMES LARSEN, M.D.

SURGICAL TECHNIQUE

ANÆSTHESIA

Van Noeragaard, K. Experimental Research on Elektronsarcode (Experimentelle Untersuchungen zur Elektronsarcode) Arch f N Chir 9 1911, 100

Leduc has succeeded in obtaining general and local narcosis by means of the intermittent direct current. Previously he had demonstrated the phenomenon of his electrical narcosis in animals. He then had two experiments made on himself but these were not pushed to full anesthesia. Paresthesia in the extremities, loss of motor reactions, and a feeling of oppression were the chief symptoms.

Tuffier and Jarry repeated the experiments and decided the question whether to curarize or use surgical anesthesia in favor of the latter. In two experiments on human beings the sensation was described as similar to that caused by chloroform, only somewhat more disagreeable. Jarry emphasized as advantages of the method the possibility of prolonging the anesthesia as long as desired without noxious effects, and the wide therapeutic applicability of the procedure. Leduc designated it as the method of choice for animals because it is least dangerous. Two experiments on human beings showed that the stage of excitation is more unpleasant than when ether is used. Nagelschmidt performed painless operations with a modification of the Leduc current and showed, like Leduc, that when the heart is stopped by current that is too strong, resuscitation is possible with the same current.

The current is obtained from a direct current by the use of rotating interrupters. The author discusses the apparatus and the estimation of the strength of the current in detail. In the experiments reported, rabbits, dogs, and cats were used. After careful shaving, the cathode was applied to the forehead and the anode to the region of the loins. The resistance was fairly constant in the same animal. In different animals there are variations from 300 to 500 ohms. The stages were as follows:

Stage 1: stage of excitation. This differed greatly, being sometimes slight and sometimes very severe and decidedly more disagreeable than that of inhalation narcosis. As a rule it was impossible to cause it by gradual application of the current. First tremor of the whole body was manifested. The head was raised stiffly, the muscles of the trunk became tetanically tense, there was increased secretion from the mouth and nostrils, and sensibility was diminished. Respiration and the pulse remained unchanged.

Stage 2: This stage was characterized by very violent defense movements. The head was thrown

round, the animal made frightened cries, the respiration became irregular and forced. The corneal reflex persisted.

Stage 3: The muscles were tensed tetanically, the corneal reflex was diminished, vomiting occurred occasionally and reflex motions occurred when much cutting was done. Without plain dehumidation, narcosis then took place. The corneal reflex disappeared, the tension ceased, and anesthesia seemed to be complete. Acoustic stimulation acted for a surprisingly long time.

That the anesthesia was complete was proved by the absence of hostile feeling in the dog when the narcosis was repeated. During the experiment, pulling on the stomach was tolerated but traction on the ureter caused slight defensive movements. A test made by the author on his own hand demonstrated that the pain sensation is greatly decreased but not abolished. From this it appears that the anesthesia is not complete although it is sufficient for most purposes. The pupil was medium large and reacted to light. Reflexes could be elicited only in the lower extremities but there were very marked interruptions of the central inhibitory fibers. The muscles showed constant tonus with chorotic twitching. On auscultation a humming muscle tone was heard. I about half of the cases vomiting of feces and, somewhat less often, of urine occurred. The respiration was forced on account of the tetanically contracted musculature of the chest and abdomen which caused funnel breast. Suddenly an expiratory relaxation took place, suggesting carbon-dioxide narcosis. This type of respiration is very unfavorable and constitutes the chief danger.

After the circuit was opened the narcosis soon ceased. The muscles relaxed and the animal lay as if sleeping. The hind legs were slack, and the gait was staccato. After fifteen to thirty minutes this disappeared. Many animals will take food after five minutes. The instantaneous reversibility mentioned by Leduc is present only when weak current is used for only a short time. In the experiments reported the narcosis was continued for nine hours. After ten minutes the dog was feeding. The first half hour is the most dangerous. During the narcosis a certain habituation of the nerve centers takes place so that the intensity of the current must be somewhat increased. The strength of the current was usually from 1 to 4 ma. Greater differences were due perhaps to differences in the contact of the forehead electrode.

When an overdose is given the breathing becomes shallower and more irregular and finally ceases altogether. The heart survives or ceases simultaneously. If the current is cut off recovery may take place after from ten to fifteen minutes. Death occurred

twice in thirty five cases. In some cases resuscitation was effected, even after artificial respiration failed, by switching the same current on and off in the rhythm of respiration. No fundamental differences between the different species of animals were noted. At necropsy the heart was found in diastole and small hemorrhages due to forced breathing were discovered in the lower parts of the lungs. Microscopic examination revealed minute extravasations in the brain vessels.

Experiments with modified currents have so far yielded no practical results. The theory that the forced respiration is caused by an accumulation of carbon-dioxide in the blood could not be verified by an analysis of the gases. On the contrary the blood was found richer in oxygen, possibly because of an

increased elimination of lactic acid caused by the strong muscular contractions.

Therapeutic experiments on man require better worked-out experimental basis. The theory of electrocardiograms must first be established on electrophysiology and physical chemistry. The author assumes that the intermittent direct current flowing in thousands of small loops through the meshes of the intercellular substance moves the inorganic ions. Perhaps the potential of the membrane of the nerve cells is changed through induction and in it that of the membrane colloids and the cell function, resulting in hypo-, hyper-, and dys-function. Is this, the action on the membrane potential depends on the frequency and strength of the current and the shape of its curve.

KULVERANDT (U)

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Schroeder J. H. *Intensive Deep Roentgen Irradiation Its Principles and Clinical Application.*
Cincinnati J. M. 9, 3, IV 74

The underlying principles of intensive deep roentgen irradiation consist in (1) the production and utilization of roentgen rays of extreme penetrating power (2) the measurement of the relative intensity of the radiation on the body surface and in the depth of the tissue and (3) the application of definite quantities of this radiation energy to deep tissues in accordance with the laws of biological resistance and reaction of the tissues.

The rays that issue from the roentgen tube at voltages of 200,000 or over must be filtered through heavy metal filters in order that the rays reaching the body will be only those that will pass through centimeter after centimeter of tissue with a practically equal percentage of absorption in each succeeding layer. These rays are the so-called practically homogeneous rays of Desauer. They are used only for deep application because they allow a maximum proportion of the original surface intensity to reach deep tissues.

In order to measure the quantity of roentgen radiation absorbed, the roentgenquantimeter has been devised. This is an adaptation to clinical requirements of the ionization chamber, all known to physicists. By means of it the depth dosage as well as the dosage at the surface may be accurately measured. This dosimetric technique is the basis of all scientific deep roentgen therapy and upon this technique alone rest the clinical achievements in this field in the German clinics.

The effect of radiation upon the cells of the body is due to the quantity of radiation energy absorbed and constitutes the biological reaction of the cells. It may be said in general that small doses irritate and large doses destroy cells and tissues, but different cells and tissues of the body do not manifest their reaction in the same degree. Some cells are very susceptible or radi-sensitive and some are very resistant. Upon this difference of radio-sensitivity now rests the ability in therapy to influence one tissue more than the other.

The biological effect of roentgen radiation is the reason for its clinical application to destroy or reduce the functional activity of the very susceptible glandular tissues and to destroy neoplastic cells.

Certain histologic types of sarcoma are very radio-sensitive and when such neoplasms are localized they may be expected to disappear rather promptly under the influence of proper radiation doses. It has been determined that an 80 per cent skin unit dose is sufficient to destroy sarcoma cells. In widely dis-

seminated sarcomata less favorable results are to be expected but even here remarkably beneficial effects are at times accomplished, as in two cases briefly described.

In the treatment of deep carcinoma by the roentgen rays it is essential that from 80 to 100 per cent skin doses be absorbed in the cancer cells. To accomplish this, great refinement of technique is necessary if undue injury to the overlying skin and surrounding structures is to be avoided. Cross-firing from two or more portals of entry usually accomplishes the desired result. The dose must be administered in one sitting because there is no way of measuring the dose as a sum of fractional applications. Under present operating conditions the dose can be administered to one area in four hours of constant radiation, at depth of 5 cm and through a body diameter of 30 cm.

It is not considered safe to repeat carcinoma dose in less than six weeks, because the physical effect of such an irradiation dose persists about that long. There is a rather noticeable effect on the blood-forming organs, rather than on the blood itself that leads to a reduction in the lymphocytes and, to some extent, of the red cells. In persons with good resistance the blood picture becomes restored in the course of six weeks.

Cancer of the pelvic organs is particularly amenable to roentgen irradiation because of the available connective tissue elements which are undoubtedly stimulated through the absorbed radiation. Several cases of deep carcinoma are reported in detail to illustrate the remarkable results which may at times be obtained by the newer intensive roentgen therapy. The effects are not always equally promising, however, as recurrences may develop and in some cases the course of the malignant disease does not seem to be influenced by the irradiation.

As regards the dangers attending deep irradiation, the author states that he has applied required large irradiation doses to most of the regions of the body except the brain, and has observed only transient irradiation by-effects. The patient's ability to react favorably to the primary effects of deep irradiation doses may determine the final result.

ABRAHAM HARTMAN, M. D.

Lacaze-Mogee, A. and Coutard, H. *The Effect of Radiation on the Ovary on Fecundation and Gestation (De l'importance de l'irradiation des ovaires sur les fécondations et les gestations ultérieures)* *Gynec. et Obst.* 913 72

To determine the effect of roentgen radiation on ova subsequently to be impregnated and on the ova of the offspring of animals whose ovaries had been radiated the authors conducted three exper-

ments. Seven normal female rabbits in one group were subjected to radiation, two female rabbits born of the first group were subjected to radiation and six female rabbits born of the first group were studied but not radiated.

The results of these experiments were briefly as follows:

1. In the rabbit of the first group there was period of temporary fertility of from three to four months.

Fecundity was re-established but was diminished as shown by a progressive reduction in the number and viability of the newborn of successive litters and the fact that cotsus as frequently non-productive.

2. Secondary progressive fertility was produced which greatly resembled a definite premature menopause.

The effect on the newborn rabbits was a considerable mortality. Of fifty one rabbit born of radiated rabbits twenty nine died shortly after birth as compared with six of fifty rabbits born of normal animals. The twenty-four animals which survived were normal at birth and developed normally to adult age.

The two female rabbits in the second group became pregnant and their first litter as normal in every way. Following radiation the findings were the same as those in the first group.

3. The third group the litter habits, and litters of the animals were normal in every way.

The conclusions drawn by the authors are as follows:

1. The lesions produced by a single radiation seem to be definite even after small dose. The ovaries which survive are altered, an alteration which manifests itself sooner or later according to the severity of the lesion, in the course of development of the follicle embryo, let 4, or newborn.

2. The ovaries are differentially affected by radiation. Those that are most developed suffer most and only a certain number of primordial follicles resist the action of the ray.

3. The changes in the ovaries are demonstrated by the presence in the gravid uterus of embryos in different stages of development both embryological and pathological, in addition to well formed embryos.

4. The experiments are too few to warrant the statement that radiation does not exert a definite cellular hereditary influence.

5. Radiation has no effect on the determination of sex, as the proportion of males to females among the newborn of radiated female rabbit is always normal.

6. In the human female X ray treatment of the ovaries even in small doses, may influence the function of reproduction. Therefore the application of the rays to the treatment of metastatic rhegma in young women causes certain permanent damage even though menstruation may return.

(S. et P. M. M. D.)

RADIUM

Degrab, P. The Value and Use of Beta Radium Rays (Utilité et utilisation des rayons β du radium). *Presse med. Par.* 933 3330 43.

Although the beta rays are the most important emitted by radium, all the qualities of radium are generally attributed to the gamma rays which are mechanically not much greater. As the beta rays have only weak power of penetration, their energy is exhausted on the superficial layers of the tissues when they are applied to the surface. When the beta rays are filtered out, no reaction is produced but if desired, a therapeutic dermatitis may be produced with them.

If eczema is treated with 2 mgm. of radium element with a filter which treats the beta rays, there is no change in the lesion, but if the same amount of radium is applied with a filter which permits 8 per cent of the soft beta rays and 95 per cent of the hard and secondary beta rays to pass, the objective and subjective symptoms are soon produced. The beneficial effect of the beta ray is therefore undeniable. Similarly if certain superficial basal-cellular epitheliomas are treated with 3 mgm. of radium element for one and one half hours, cure will be effected but if the beta rays are filtered out the lesion will not be changed.

Among the conditions amenable to the action of the beta rays are eczema, prodermatitis, acne, papuloma, wart, pigmented naevi, lupus, certain angiomata, pre-epitheliomatous conditions and certain cutaneous epitheliomata.

The action of the beta rays is much more rapid than that of the other rays emitted by radium. Therefore if the desired results can be obtained with them they are preferable to the gamma rays.

(W. A. B. M. D.)

Lawrence, H. Experimental Research Work in Radium in Therapy Including Death Retardation of Growth Prolongation of Life Determination of Sex. Sterilization and Artificial Parthenogenesis, Reproduction Without the Male. *Med. J. London* 1 41.

This article deals briefly with the influence of radium upon the metamorphosis of insect life. The experiments were done on the Bombyx moth or common silk worm moth and have been going on for 3 years continuously. Ten generations of moths have never been seen if the influence of radium radiation, and the great danger of taking place due to the continued exposure.

It was found that if the ovum of the moth is exposed to 1 mgm. of pure radium bromide with a distance of one inch or less, and once accepted, the ovum were so affected that though fertilized, the embryo is destroyed.

Other experiments which aluminum or leaden receptacles were used showed the great value of the high velocity beta rays from Radium C, which are not present in the X rays. It is the

found that under the influence of radium the life history of the insect is being altered.

In the disintegration of radium, alpha particles, beta electrons, and gamma rays are produced, and it is estimated that the energy expended in bringing about these changes is equal to that developed in a tube voltage of one or two million volts. At the greatest tube voltage which scientists have been able to develop in the production of the X-ray is about 550,000 volts. It is seen that the initial force in the production of alpha particles, beta electrons, and gamma rays is about four to eight times as great as that used in the production of the most penetrating X-rays yet produced. In fact, the gamma rays of radium are 5.5 times greater in penetration than the most penetrating X-ray yet produced.

Two cases of gonorrhea as papilloma of the eye interfering with vision are reported. These were treated with an applicator emitting even soft beta electrons. Both lesions disappeared and the patients are well.

The author calls particular attention to the fact that the beta electrons present from Radium C are of immense therapeutic importance. The most obstructed X-ray there are none except the few soft, slightly penetrating ones formed when the X-ray strikes tissue and these are of slight efficiency as compared with those from Radium C.

Emphasis is placed by the author on cross fire treatment in which beta electrons are used locally and other preparations close by emit gamma rays only. The efficiency of this form of treatment is illustrated by three cases of epithelioma of the lip.

Persons who previously had had a clinical cure of the disease. The author does not regard these cases as recurrences but states that the lesions form in persons predisposed to the condition. All of the cases cited or locally cured by the cross fire method. A case of epithelioma of the larynx was cured by placing radium giving off beta electrons

the hollow of an intubation tube against the growth and cross firing with gamma rays from the exterior of the neck.

The lethal dose for ova of the silkworm was found to be the use for one hour of 1 mgm of radium bromide screened only sufficient to absorb the alpha and the softest of the beta electrons. Larvae

only a few days old were killed in from two hours to three hours. The time required is greatly increased as the grub grows older. Cross fire between two 5-mm tubes was found to be more effective in one half hour than the use of either tube for one hour. When placed directly upon the ova, the radium killed about ten eggs, but when it was placed 4 or 5 mm from them it killed twenty eggs. This proves that in the therapy of rodent ulcer diffusion must be considered. A tremendous dose of X-ray equal to about ten erythema doses—100,000 volts, 5 ma, 20 cm from the anode for four hours and twenty minutes with a filter of 1.3 mm of copper and 1 mm of aluminum—resulted in the free hatching of the eggs.

The X-ray and radium rays are not alike especially when high velocity beta electrons are used. Two cases, one of basal cell and one of squamous cell epithelioma, are cited in which a cure was effected by radium with the use of the high-velocity beta electrons. In larvae given radium in doses insufficient to kill, growth is retarded. Also seeds exposed to radium are sterilized.

In none of the many experiments carried out on animals and vegetables was there any evidence of stimulation. In every case there was retardation, if any result at all. The seeds of turnips exposed to radiation showed deformity and retarded growth when radium was used but appeared unchanged when the X-ray was employed. This supports the author's contention that the high velocity beta electrons of radium should be employed whenever possible, and that the beta rays formed when the X-rays strike tissue are soft and feeble in penetration as compared with those from radium. Koenig and Friedrich have shown that the action of soft and penetrating X-rays is practically the same. Evidence of stimulation was found in over 1,000 experiments with radium in all possible types of exposure.

In the tenth generation of moths kept under the influence of radium there are about five males to one female. This change is attributed to the radium influence. Sterilization of the moth can be produced by radium at any stage of development. The X-ray has only slight power to produce sterilization.

A. J. WEA LARKIN, M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Fawcett, J. and Ryle, J. A. Cases of Delayed and Immediate Anaphylactic Shock, with Notes on the Circulatory Phenomena. *Brit M J* 1923, 1, 375

True anaphylactic shock in man is rare. Notwithstanding the innumerable instances of the repeated administration of various sera during the war it has been generally conceded that cases of serious or fatal anaphylaxis were few. It is recognized that man is less sensitive and less easily sensitized than the experimental animal, and it would seem that hypersensitiveness in man is more apt to be an inborn than an acquired phenomenon, and that most of the recorded fatal cases were those of asthmatic persons.

The first case reported by the authors was that of a woman, aged 23 years, who was admitted to the hospital because of a septic finger. While she was under the influence of an anesthetic during one of several operations, 50 ccm of antistreptococcus serum was administered. Four days later patches of urticaria began to appear and eight days after the injection the appearance of large patches of urticaria was associated with asthma, purior, rapid and weak pulse, and sensation of cold. Following a small dose of adrenalin the asthmatic symptoms disappeared. The pulse at the wrist became imperceptible and remained so for over twelve hours. The apex beat could be felt and remained about 30. The patient was never cyanosed, and she continued to be mentally alert, quite rational, and calm. She was treated throughout with warmth, small quantities of fluid, brandy and lactose by mouth, and the rectal administration of glucose solution.

Twenty-eight hours after the onset the radial pulse could be felt faintly. The patient then complained of acute pain in every joint. The pulse rapidly returned to nearly normal about thirty-four hours after the onset of urgent symptoms. Two days later the joint symptoms had entirely disappeared, and subsequently recovery was uneventful except for the development of an abscess which was presumed to be metastatic, in the right breast.

The temperature reached 103 degrees F when the shock symptoms were at their height but quickly fell again to normal. Gastro-intestinal symptoms were absent excepting at the onset when vomiting occurred twice and there were two bowel movements. It was later discovered that during an attack of diphtheria sixteen years previously the patient had been given antitoxin but there had been no resulting symptoms. The authors therefore assume that, in

spite of the long interval, this was an instance of sensitization by a previous dose.

In the second case, that of a soldier, the symptoms appeared an hour after the administration of a third dose of A.T.S. After one of two previous prophylactic injections the patient had felt ill. The symptoms observed in this case were almost identical with those of the first except that asthma was absent, and with the exception of the symptoms of circulatory failure, gastro-intestinal symptoms were the most prominent.

In both cases the fluid intake was well maintained and there was no unusual loss by sweating, vomiting, diarrhoea, or diuresis. The symptoms of circulatory shock persisted long after the disappearance of bronchial, cutaneous, and gastro-intestinal reactions. The authors are not familiar with any other condition in which pulselessness can persist for so long with a good prognosis. The cases reported emphasize the importance of obtaining a history regarding previous serum treatment in every case about to be treated with serum.

STANLEY J. SINGER, M.D.

Lambert, R. A. Oriental Sore (Cutaneous Leishmaniasis) in the United States. *J Am M Ass* 1923, 100, 986

A wider knowledge of oriental sore on the part of American physicians and public health officers is important as in the last ten years at least eight cases of this infection have been reported in this country and Canada. Lambert reports two cases, and outlines the course and treatment usually followed. The article is concluded with the following summary:

1. The two cases of oriental sore in the United States have reported make a total of ten cases recorded in the last two years.

The incubation period may be long. In one of the reported cases the lesion did not appear until three months after the patient's arrival in the United States, and probably eight months after the infection.

2. Biopsy is to be advocated in suspected cases, the specific protozoan (*Leishmania tropica*) being more readily demonstrable in properly stained sections than in smears. E. C. ROSENBAUM, M.D.

Obergall, S. S. The Pathogenesis and Treatment of Spontaneous Gangrene (Zur Pathogenese und Therapie der Spontangangraene). *Wiens Med Wochenschr* 1923, 49, 1, 8

The term spontaneous gangrene has been applied to a number of diseases in which the most striking symptom is gangrene of the lower extremity but should be used for only those in which there is an underlying involvement of the walls of the vascular system. The changes in the vascular walls

consist in a thickening of the intima beginning in the membrana elastica with the formation of thromboses along the wall and ending in occlusion of the vascular lumen.

The cause of these changes must be sought in changes in the blood consisting in an increase in the viscosity and coagulability greater resistance of the erythrocytes, and an increase in the vasoconstricting property of the serum. The disease may be characterized as a toxic angiosclerosis or true a totonic condition. According to the views of Oppel, the cause of the change in the blood may be a disturbance of the function of the endocrine glands, in which constant vascular spasm is of great etiological importance. The author regards as logical Oppel's proposal to remove one suprarenal gland (the left) in these cases of gangrene as the suprarenal glands produce substances which constrict the blood vessels. Gurgeloff has carried out this operation successfully. SCHLAEGER (Z)

Paszkiewicz, L. The Causation of Neoplasms by Tar (Erzeugung von Neubildungen durch Teer). *Polish per M.* 9, 1, 707

The author reports his attempts to cause cancer by the application of tar after the method of Yamagawa. While positive results were obtained by Lipechuk on the eighty eighth and one hundred and twenty-fifth days, and by Bensch and Moeller in the third and fourth months in 60 per cent of their cases, the author was unable to obtain them up to six months. Neither did he observe like Bensch and Moeller any excessive growth of horny substance in the epithelium in the first month or proliferation of the epithelium at the end of the second month. At most, he noted in few animals moderate shedding of the epithelium for short periods of time.

The author's experiments were made on white rats, half of them young and the other half old, and the tar used was that sold by druggists for therapeutic purposes. Irritation was caused with this tar every second or third day by rubbing it into the back, rubbing it into the skin after previous scarification, or by subcutaneous or intracutaneous injections. In female animals it was injected into the mammae or rubbed into the skin below them. The area of injection was carefully shaved.

All the animals remained alive and in good health. The author does not consider his experiments as finished, but so far they have convinced him that to irritate certain spot alone is not sufficient to cause malignant neoplasms, even if this is done continuously and in the same manner. Other factors are also of importance, such as general habits of life, the kind of nutrition and individual and race peculiarities. He believes that experimental cancer cannot be considered identical with clinical cancer. In conclusion he expresses doubt as to whether the metastases observed to spring from tar neoplasms are true metastases of these neoplasms. JUDAK (Z)

GENERAL BACTERIAL, MYCOTIC, AND PROTOZOAN INFECTIONS

Chasoul, H. The Treatment of So-Called Surgical Tuberculosis (Die Behandlung der sogenannten chirurgischen Tuberkulose). *Jahrbuch f. crit. Fortbld.* 9, 2, 324.

This article is a discussion of the effect of roentgen irradiation. From 1919 to 1921 165 persons with tuberculous lymphadenitis were treated. Sixty-four per cent were cured, 31 per cent were benefited, and 5 per cent were unaffected or suffered a relapse. The most favorable results are obtained in the inflammatory hyperplastic forms of the condition. In glands which have already become softened it is advisable first to evacuate the pus by puncture. The slowest reactions occurred in suppurating ulcerative or fistulous lymphomata which ruptured externally. The best results were obtained with medium strong doses (40 to 60 per cent of the skin erythema dose) given in six or seven sittings at the most.

Of 4 persons with tuberculosis of the bones and joints, sixty-eight were cured, thirty-six were benefited, eleven remained unaffected, and four died. The dosage in the depth of the area of disease was 50 to 60 per cent of the skin erythema dose. The most rapid reaction was seen in tuberculous of the foot, the hand, the ribs, and the tennum. In spondylitis, the greatest care is necessary because of the danger of the disintegration of bone. In the presence of tendency toward healing in tuberculosis of the bones and joints the favorable effect of the roentgen irradiation is noted early. In some cases the results are considerably improved by surgical interference for the removal of loosened sequestra and the puncture of gravitation abscesses. Incisions should be abandoned because of the associated danger of secondary infection.

The results of roentgenotherapy are favorable also in peritoneal and urogenital tuberculosis, particularly tuberculous epididymitis. Of ten patients, six were cured and three were considerably improved. The dosage was similar to that used for the treatment of the lymph nodes. The area selected should not be too small.

In conclusion the author states that even though roentgenotherapy does not compare favorably with heliotherapy in every localization of tuberculosis, it nevertheless has such great advantages in regard to the shortness of the treatment and the ease of its application that it should be given preference over heliotherapy in many cases, even though the outlook is less favorable. WAGNER (Z)

EXPERIMENTAL SURGERY

Sweet, J. E. Some Recent Developments in Surgical Research. *Pennsylvania M. J.* 29, 3, 227, 396.

HIGH INTESTINAL OBSTRUCTION

The symptoms of high obstruction do not at first differ from those of any other intraperitoneal condition. The physician should not wait for localizing

signs, but should get the patient where surgery can be done if necessary. In the meantime the use of morphine is contra-indicated as it paralyzes peristalsis, and increased peristalsis is the body's attempt to get rid of the toxins.

The author mentions seven theories as to the cause of death from obstruction. An eighth theory is that under the conditions of obstruction some toxic element is elaborated by the cells of the mucous membrane of the intestine. This theory has been questioned but not disproved and is the one which Sweet regards as most correct. The intestine elaborates a proteolytic ferment which normally acts upon the food in the intestine. Under the conditions of obstruction this ferment is absorbed into the lymph and blood streams, and we have a condition entirely comparable, in symptoms and in character to acute pancreatitis.

The study of the problem by producing various types of obstruction is so complicated, and the interpretation of the results so difficult that in recent work a attempt has been made to study the effects of the poison in the normal animal. The poison is obtained by percutipating the content of an obstructed loop of intestine in alcohol and can be further purified to some extent. When fatal dose is injected intravenously into normal animal the picture which follows corresponds to that in an animal with an actual obstruction, and the autopsy findings also are constant and typical. Therefore the intestinal content of this animal, with no obstruction and with nothing whatever done to its intestinal tract, contains the same poison. It is scarcely probable that this toxin is the injected dose, for the great dilution in the fluids of the entire body is of the less incident to the crude methods of collecting and recovering it rule out such possibility. Accordingly it seems apparent that the toxin itself creates conditions favorable for its further elaboration. This experiment has been carried through four consecutive animals. The findings of the experiment described, another observation is added, viz that the same toxin appears in the intestine after the removal of both adrenals when there has been no obstruction of or operative interference with the intestinal tract. This phenomenon, therefore seems to indicate strongly that the only factor responsible is a disturbance of normal processes.

The experiment with the normal animal and the intra venous injection can be carried out in relatively short time. The animal is attached to recording apparatus, cannulae are placed in the different portions of the intestine, and the contents of each portion are studied separately. It thus appears that the excretion of poison is greater in the duodenum but is not limited thereto, and that it appears before the characteristic hemorrhage into the intestine.

By different line of experiment, the author and his coworkers arrived at the same conclusion as Whipple namely that the cause of death in high

obstruction is a poison which is formed in the cells of the mucous membrane of the small intestine, more in the upper small intestine than in the lower which passes in two directions from these cells—into the lumen of the intestine, where it does no further harm, and into the lymph and blood streams, from which the toxic effect is exerted upon the body as a whole.

In explanation of the life saving action of the stomach pump before operation, Sweet says that by removing the toxin already excreted into the gut, gastric lavage creates conditions favorable for the excretion of still more toxin into the gut, and the greater the amount thrown out into the bowel, the less the amount to be absorbed into the body. Therefore the intestine should be given every chance to empty itself back into the stomach, morphine should be withheld, and water should be given by the intravenous injection of saline solution. The appearance of the large bowel in these experiments leads to the conclusion that toxin is being excreted into it. Therefore water should be given to wash the product of the mucosa into the bowel. The finding of the toxin after adrenalectomy suggests the addition of adrenalin to the saline solution. The operation of choice is the one which will permit the most thorough drainage of the bowel both above and below the obstruction. The administration of saline solution should be continued also after operation.

THE EFFECT OF RADIUM UPON NORMAL NERVOUS TISSUE

The work of the author and his coworkers with radium began with the request of Frazer for an experimental study of the effect of radium upon the normal tissues of the brain and cord to obtain more direct information as to the best procedure in the treatment of brain tumors.

The first effect of the radiation is upon the nuclei of the cells. This may be sufficiently severe to cause the death of the cells, but does not destroy their ferments. These ferments attack the substrata of the cells, and if the cells contain chiefly protein, the toxic products of protein breakdown are set free and a condition arises which is comparable to the condition in acute pancreatitis or high obstruction. It would seem, then, that radium is a therapeutic agent of limited specificity.

The author summarizes the conclusions drawn from these experiments as follows:

It should not place our confidence in the use of radium alone. An operable condition should be entrusted to radium alone. All removable cells should be removed with the knife or the cautery, leaving radium the task of reaching the small masses of cells in the metastases. In other words, operation plus radium never in any possible case radium without operation. It must in our practice, work constantly against the danger of adding to the numbers of hopeless cases by permitting a deceiving trust in radium alone.

THE FUNCTION OF THE GALL BLADDER

The only mechanism for the emptying of the gall bladder which could be found was the pressure of the adjacent organs and possibly a slight negative pressure which might be created in the intramural segment of the common duct as was a peristaltic passage over this portion of the intestine.

The organ is supplied with lymph system out of all proportion to the amount of tissue contained in its walls. During the process of concentration, the water of the bile can enter only the veins or the lymphatics. The development of the lymphatics is so extreme as to suggest that the concentration of the bile takes place by means of the action of these vessels. If suitable solutions are placed within the gall bladder they can be detected in a very short time in the lymph obtained by inserting capillary pipettes into the lymph vessels—in fact, as quickly as it is possible to collect the lymph after injecting the solution into the interior of the gall bladder.

Experiments now in progress further indicate that reactions for bile can be obtained in lymph collected from the lymph channels of the gall bladder.

The demonstration of the extent of the lymphatic apparatus of the gall bladder and the speed with which substances pass from the gall bladder into the lymphatics has made clear to Sweet the directness of the relation between other intraperitoneal infections and cholecystitis. As he sees the process now organisms from chronic appendix for instance pass into the portal blood stream are filtered out of the blood by the liver and then thrown into the bile. Were it not for the concentrating action of the gall bladder and the direct relation to the lymphatics, these organisms could pass out through the common duct to the interior of the intestine which is, strictly speaking, outside of the body. Instead they enter the gall bladder and pass into the stream into the lymphatics, where they cause inflammation of every infection of the body except pyemia is a lymphangitis.

With regard to the value of the duodenal bucket in the diagnosis of gall bladder conditions the author as in conclusion I will let you to deduce in opinion from the statement that I am present working on the hypothesis, developed from consideration of the facts and experiments I have just described, that what goes into the gall bladder through the cystic duct never comes out of the gall bladder through the cystic duct.

CAR R. STINEBAUGH, M.D.

5. H. H. F. and Boots, R. H. The Influence of Sodium Salicylate upon the Arthritis of Rabbit Inoculated with Non-Hemolytic Streptococci. *J. T. Med.* 9:3 333-4, 1911.

Rabbit inoculated intravenously with non-hemolytic streptococci developed inflammation in almost every joint while under the influence of full therapeutic doses of sodium salicylate as the untreated controls similarly inoculated, but the inflammation was overall less severe.

This inflammation inhibiting effect was most evident in the animals inoculated with streptococci of the lowest virulence, and could not be demonstrated in animals inoculated with hemolytic streptococci.

SURTEL KARY, M.D.

Marinaccio M. G.: The Role of the Oxidizing Ferments in the Mechanism of Thermogenesis and Fever (Recherches sur le rôle des ferments oxydants dans le mécanisme de la thermogenèse et de la fièvre). *Presse Méd.* Par. 9:3 333-33.

As the result of his investigations the author concludes that the most important factors in the regulation of thermogenesis and the development of fever are the oxidizing ferments. These vary in quantity in different animals and at different temperatures. They are very abundant in man and in birds. In all febrile diseases the cells containing ferments increase in number activating combustion throughout the body.

W. A. BARN.

MEDICAL JURISPRUDENCE

Physician's Right to Sue Employer for Services Performed. His Request for Employees Not Affected by Compensation Law. *Winnipeg Western Mail & Sun* 27:1 35 pp. p. 333.

If the employer hires the physician it is simply a matter of contract between the physician and employer. If the amount to be paid is stipulated, the physician is entitled to receive that sum. If no amount is named, the physician is entitled to receive the reasonable value of his services. A failure to pay gives rise to common law action that may be prosecuted in the courts. There is no more reason for giving the Commission the right to limit or control the sum to be paid under the contract of employment than there would be to require all contracts with employees to be submitted to the Commission to pass upon the reasonableness of the rates agreed to be paid. WILLIAM E. MOORE.

Surgeon Who Agrees to Perform Operation Does Not Guarantee Results. *Winnipeg Western Mail & Sun* 27:1 35 pp. p. 333.

The plaintiff in this case alleged that in June 1909, he sustained an injury to the thumb of his left hand which rendered the first joint stiff that he was a jeweler. He was employed by the defendant in repairing watches, doing engraving and manufacturing jewelry. That he consulted Dr. Blair who for a valuable consideration agreed to perform a surgical operation upon the thumb and guarantee that after the operation the hand would be normally efficient and that such an operation was performed but that the result was further injury to the thumb and hand. On trial verdict of \$5,000 was returned in favor of Wilson. From this appeal was taken.

The question presented is: Was there an agreement between plaintiff and defendant enforceable at law by which the latter guaranteed and warranted

stant that as a result of such operation the plaintiff's hand would be cured of all defects and rendered 100 per cent efficient? If the contract in question was merely that the defendant was to perform a surgical operation, then the law requires that the defendant possess the skill and learning which is possessed by the average member of the medical profession in good standing in the community in which he resides, and apply that skill and learning with ordinary and reasonable care. He does not become a guarantor of the results of such operation.

It is apparent that the warranty was made after the agreement to operate and to pay therefor, that the warranty did not become a part of the contract to operate, and that there was no consideration for the warranty. We are of the opinion that the trial court erred in denying the defendant's motion for a new trial, that the verdict is against the law, and that the motion for a new trial ought to have been granted.

WILLIAM E. MOONEY

Responsibility of the Physician in the Case of an X-Ray Burn. *Stemons vs. Ferrer*, 7 Idaho Rep. 9

The defendant in this case was an osteopathic physician. Stemons was his patient. In the endeavor to diagnose the latter's complaint the physician made a number of roentgenograms of the affected region. At this point a burn developed, causing pain and suffering. On a trial of the case judgment was rendered against the physician, and an appeal was taken principally to test out instructions that the physician claimed were erroneous and prejudicial to him. There was nothing in the case which showed that the machine was different from those ordinarily used, or that the physician, through lack of training or otherwise, was incompetent. The issue was therefore limited to whether the physician used the machine negligently or ignorantly. An instruction to the jury that the physician was required to use a high degree of care when the law required him to use only the ordinary care generally exercised under like circumstances, was therefore declared erroneous.

The trial court also instructed the jury generally as follows: All of the physicians and the X-ray specialists agree that, by proper and careful use of certain accepted and recognized formulae by the profession, which formulae have been described, and which you will recall, an X-ray burn could not occur. The defendant says that he used a formula of even less intensity than that. Obviously, therefore, if the defendant did use the formula which he says he did, then his application of the X-ray did not cause an X-ray burn of the plaintiff's groin. However, if you find as a fact that the plaintiff did sustain an X-ray burn of the groin, then you would be justified in concluding that, while the defendant told you that he used the X-ray according to harmless formulae, he was not telling you the truth, and that, on the other hand, the formulae

that he did actually use was a negligent and improper formula under the circumstances.

The Supreme Court held that this was not a fair statement of the law. The fact that the jury was instructed, in effect, that because injury resulted, they could draw the inference that the physician did not tell the truth, even he said he used less dosage of the X-ray than that which was safe under a well-known formula is not in harmony with the law. The rule as announced leaves out of account the idiosyncrasy of certain persons to the X-ray. That there is such idiosyncrasy and that it cannot be known until after the X-ray has been used, was shown at the trial.

The court unduly stressed the fact that the X-ray is a dangerous instrumentality. This is true also of the surgeon's knife. But if human life is to be cured, such instrumentalities must be used. "I put upon the medical profession which must use them, such burdens as financial responsibility for damages if injury or death results, without proof of specific negligence, could drive from the profession many of the very men who should remain in it, because they are unwilling to assume the financial risks. For these and other reasons a new trial was ordered."

WILLIAM E. MOONEY

Responsibility of the Surgeon in the Case of a Burn from Hot Water Bag. *Harber vs. Glazier*, 20 Pac. Rep. 10

Mrs. Harber was operated upon by the defendant, and after the operation, while she was in an unconscious condition she was by them taken from the operating table and carried to, and laid on, a bed which contained three hot water bottles. The evidence as to who placed the bottles in the bed is uncertain. It was the duty of the special nurse, employed by the patient, to attend to the warming of the case and to attend the bed. When the surgeons arrived at the bed two hot water bottles were observed by them and the nurse who had accompanied them (not the special nurse) was ordered by the physicians to remove them. Two of them were removed, but the third remained in the bed. Before the patient recovered consciousness her leg was severely burned by the hot water bottle in the bed. In the trial court judgment was entered against the physicians and the hospital.

The Supreme Court stated: Had the surgeons done nothing more than perform the operation had they not assumed the additional task and duty of conveying the patient to her bed and placing her therein, the contention that they could not be liable would be sound. Having undertaken to carry the patient to her bed and putting her in the bed, it was their duty to know that the bed was free from anything that might harm or endanger the helpless patient. They had no right to close their eyes and rely upon some one else to protect the unconscious patient from danger. Accordingly the judgment was affirmed.

WILLIAM E. MOONEY

BIBLIOGRAPHY of CURRENT LITERATURE

NOTE—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THIS INDEX ON WHICH AN ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

SURGERY OF THE HEAD AND NECK

Head

- The old head injury case J C MICHAEL J Am M
Ass 9 3, 1933, 647
A wound of the frontal bone with an infected cerebral
hematoma its treatment C PERJONOTA Sciencas med
933, xxi, 603
Fibrous osteoma of the skull N N PETROW Arch f
klin Chir 9 3, cxviii, 849
Lateral sinus thrombosis two case reports E AM-
ERSON Grace Hosp Bull Detroit, 9 3, vii, 5
Furuncles of the face and their treatment W HORT-
MANN Arch f klin Chir 933, cxviii, 5
Facial autoplasty with skin flaps with long tubed ped-
icles P MOUTER Bull et mémo Soc de chir de Par
9 3, xiii, 37

Eye

- Where the field of the ophthalmologist meets that of the practi-
tioner B Y AVIS Illinois M J 1933, xlii, 3 9
Considerations upon the cure of pulsating exophthalmos
MAJOCCHI Arch Ital di chir, 9 3, vi, 64
The role of eye status in headaches E DUBOIS Am
J Clin Med 933, xxi, 5
Heterophoria L W FO Am J Ophth 9 3, vi,
[193] 1
The transfer of function of the ocular muscles E
JACKSON Am J Ophth 933, vi, 7 [193]
Disrupting accommodation artificially produced R
F FARROW J Iowa State M Soc 933, xli, 35 [193]
Some congenital anomalies of the eye and their confusion
with acquired conditions I C MA Lancet, 9 3,
civ, 743
The laws of heredity in ocular pathology PRINOT
Presse med Par 1933, cxvi, 373
Eye pathology of dental origin W W GILL Virginia
M Month, 933, 1, 48
A clinical study of ocular leprosy F M NIVOT Prog
de la clin, 933, xiv, 4 7
The toxicologic aspect of ocular disease P DUVY N
York M J & Med Rec 9 3, cxvii, 457 Lancet 9 3,
civ, 696 [193]
Injections of milk in ocular therapeutics L CHERRIER
Presse med Par 19 3, cxvi, 78 [193]
Sympathetic ophthalmia RUDOLF and GUTRAL Rev
de med y chir de la Habana, 9 3, xivii, 578
Malacosteom—perforated bladeless J I KERR U S
N val M Bull 933, xviii, 419
Some curious phenomena of vision and their practical
importance F W LEONARD GERRY Med Press, 9 3,
civ, 54 [193]
Quorum amblyopia J N D AND Am J Ophth 933
vi, 371
Increase of hyperopia in diabetes W H ROBERTS
Am J Ophth 9 3, vi, 901

- Causes of bitemporal contraction of the visual field
E HILL Am J Ophth 933, vi, 57
Visual changes due to anisometria—report of two cases
W R PARLER J Michigan State M Soc 9 3, xxi, 77
Anisometropic reflex manifestations between the eyes and
teeth W W KERRY J Am M Ass 9 3, 1933, 34 [193]
A self-registering campimeter and sclerometer J W
Downey Am J Ophth, 9 3, vi, 28
Allopecia and pobosis of the eyelids W C POSEY J
Am M Ass 933, 1933, 304 [193]
Three cases showing retraction of the eyelids J COL-
LIER Proc Roy Soc Med Lond 933, xvi, Sect
Neuro 46
Vernal conjunctivitis of the tarsal form in the post
papulae cured by radium M M AMAR Septo med 933
ix, 34
Conjunctivitis of anaphylactic origin H LA GRANGE
Presse med Par 933, cxvi, [193]
Trachoma (granular conjunctivitis, chronic ophthalmia)
among the Uta Indians I C ALFORD Northwest Med
933, xxi, 38
Conjunctivitis of trachoma and vernal catarrh L
CORRIS Rev méd de Serrilla, 1933, xlii, 7
Sclerostoma in trachoma J W WALKER Am J
Ophth 9 3, vi, 279 [193]
The regional anatomy of the tear sac J M PATTON
Ann Otol Rhinol & Laryngol 933, xxxv, 58
Indications, contra indications, and preparation for
dacryocystostomy R A FIDYOT Ann Otol
Rhinol & Laryngol 9 3, xxxv, 67
The combined intranasal and external operation on the
lacrimal sac Mosher Toti H P MOSHER Ann
Otol Rhinol & Laryngol 9 3, xxxv,
Dacryocystostomy combined methods W E
SUTTER Ann Otol Rhinol & Laryngol, 933, xxxv, 5
Ophthalmomyiasis A TUCKER Brit J Ophth 933,
vi, 77
An epithelial cyst of the cornea F POTALES Prog de
la clin Madrid, 933, xiv, 86 [193]
Neuropathic keratitis, emulsification without anaes-
thesia E STERNBERG Atlantic M J, 933, xxvi, 467
Siderosis J L GIBSON Brit J Ophth 933, vi, 74
A fixation abscess in case of severe endocyclitis A
GOWLAND and J A GALLINO Rev Assoc med argent,
9 3, xxxv, 788 [193]
The etiology of uveitis B CRAWCE Am J Ophth,
933, vi, 284 [193]
Lense antigens to absorb cortical matter A E DAVIS
Am J Ophth 933, vi, 395
Lentogenic reaction of the lens L HARTMAN Am J
Ophth 933, vi, 376 [193]
So-called glass-of-lookers' cataract occurring in other occu-
pations, with report of two cases A W SCHERL Brit J
Ophth 9 3, vi, 16

Prognostic action of radium radiation in the treatment of small or large infected tonsils and lingual tonsils F H WILLIAMS Boston M J S J 923, cliv. 40, 497 [113]

Report of case of tonsillar cyst, high protruded from the tonsil as pedunculated tumor A W PROCTOR Ann Otol Rhinol & Laryngol 923, xxxix, 3

Electrocoagulation of tonsils T H PLANA Med Herald, 93 xlv, 13

Tonsillectomy in adults under local anesthesia J J KIRVO Internat J Surg 923, xxvii, 14

Procs. those to be taken after the tonsil operation H HAYE Med Times, 93, h, 00

The after results of the different methods of tonsillectomy with special reference to the La Forge as compared with the ordinary dissection with the snare A critical review of 100 cases R P TIERMAN Laryngoscope, 923, xxxiii, 280

Unsuccessful tonsil and adenoid operations A J M WRIGHT Bristol M-Chir J 923, xl, 84

The treatment of Ludwig's phlegmon by excision of the submaxillary gland E REISS Klin Wchnschr 1922, xix, 8

A case of pharyngeal pouch A RYLAND Proc Roy Soc Med Lond 193, xvi, Sect Laryngol 41 [113]

Two pharyngeal tumors O KETTER Casop Mikrob 923, lxi, 589 [114]

Surgical anesthesia in the treatment of malignant disease of the throat W S STARR Glasgow M J 923, xvii, 2

Neck

Two cases of descending retro-pharyngeal abscess with phlegmon of the neck and threatening mediastinitis: treatment through the vascular route: prophylactic collar anesthesia: recovery O GLODDE Laryngoscope, 923, xxxiii, 300

Soreness and swellings in the necks of children O MOWAT Brit M J 923, i, 671 [114]

Congenital tumors of the neck P DELBERT Med Press, 923, xcv, 319

An obscure cervical growth W MERRITT Brit J Surg 923, x, 576

A case of tumor of the cervical region—papillomaboma BLOOM, BORLAND vs PIERCE J de med de Bordeaux, 93, xiv, 366

The enlarged thyroid gland from the viewpoint of the laryngologist L HENDER N York M J & Med Rec 93, cxvii, 4

Fifteen cases of thyrectomy in adults A MARROU Arch franco-belges de chi 923, xxvii, 27 [114]

Present-day consideration of the thyroid J B HARRIS KLIN N York M J & Med Rec 923, cxvii, 401

The probable normal and pathological physiology of the thyroid J ROBERTS N York M J & Med Rec 923, cxvii, 393

The physiological and pathological importance of the thyroid secretion H STA LYN JONES N York M J & Med Rec 93, cxvii, 389

Basal metabolism C E FRYN Atlantic M J 923, xvi, 429

A comparison of the basal metabolic rate with the histopathology in thyroid dysfunction J B R KIR N York M J & Med Rec 193, cxvii, 393

Basal metabolism: its application to disorders of the thyroid G D CORLIAN Atlantic M J 93, xxvii, 43

The relation of the basal metabolic rate to diseases of the thyroid gland A S JACKSON and R H JACKSON Am J Surg 923, xxvii, 86 [114]

A symposium on thyroid disease J T BELL H I ULSTER, V O FRANCH, and others J-Lancet 923, the 55

Thyroid disease A C ROOZE J Indiana Med Ass 93, xvi, 25

Deficient thyroid influence in children, with the prevention of cases after eight years treatment C F HUNT Cincinnati J M 923, iv, 92

A clinical consideration of some phases of disease of the thyroid gland W D HARRIS Cincinnati J M 923, iv, 98

A clinical and pathological study of fifty cases of hyperthyroidism R B HILL California State J M 923, xii, 163

Hyperthyroidism T G MOOREHEAD Brit M J 1923, i, 395

Discussion of symposium on goiter S J W TERRY, L O COLE, C H FRASER, and others Atlantic M J 93, xxvi, 59

Discussion of symposium on goiter L LITCHFIELD, H D JONES, A E ROUSSET, G W REISS, and D MARTEL Atlantic M J 923, xxvi, 44

The treatment and prophylaxis of goiter J WAGNER J Urolog Wies Klin Wchnschr 923, xxvii, 19

The goiter of adolescence J SELLINGER N York M J & Med Rec 923, cxvii, 390

The prevention and treatment of simple goiter D MARTEL Atlantic M J 923, xxvi, 437

Adenomatous goiter C B NORRIS Atlantic M J 1923, xxvi, 434

Colloid goiter M J NOOTE Atlantic M J 1923, xxvi, 436

Endemic goiter and cretinism, and their prophylaxis O HORN Klin Wchnschr 1923, x, 1, 8073 [115]

Intra-tracheal stricture L PRINCE Beitr path Anat u allg Path 923, lxx, 474

The treatment of parenchymatous goiter (th the X ray) H WUNDER Strahlentherapie, 92, xiv, 64

Exophthalmic goiter L A SERRADIAN Atlantic M J 93, xxvi, 435

Atypical exophthalmic goiter I BEAN Illinois M J, 93, xliii, 3

The structure of goiter (th particular reference to Basedow's disease) A THOMAS Fourth Symp Lond Soc Path Soc Lond 93, xi, 20, 5 [115]

Basedow's disease (its pathogenesis and treatment) J KOONEN Vlaamsche geneesk Tijdschr 1923, iv

Studies of exophthalmic goiter and the involuntary nervous system III A study of fifty consecutive cases of exophthalmic goiter L HARRIS, C C LYN, H T II, and H LAYNE Arch Int Med 923, xxx, 433 [114]

The pulse pressure in exophthalmic goiter I HARRIS Brit M J 93, 630

Studies of Graves' syndrome and the involuntary nervous system II The clinical manifestations of disturbances of the involuntary nervous system (autonomic imbalance) L HARRIS and H T HARRIS Am J M Soc 93, cxv, 52

The pathogenesis and treatment of exophthalmic goiter in the light of our present knowledge A GORDON N York M J & Med Rec 93, cxv, 383

Report of case of acute exophthalmic goiter treated successfully by the use of the X rays M D MARTEL Virginia M Month 923, i, 57

Alcohol injection in the treatment of exophthalmic goiter P P JONES Zentralbl Chir 93, i, 47

The mortality in the surgery of exophthalmic goiter J W J THORNTON, Beitr Gynec & Obst 1923, xxvii, 458

The results of treatment in 100 consecutive cases of hyperthyroidism H A FARRAR N York M J & Med Rec 9 3, cviii, 395

The surgical management of patients with goiter W D HAYES J Am M Ass 931 lxix, 954
Goiter and its treatment E ROOS Med Klin 923, xiv 45

The surgical arrangement of goiterous patients W D HAYES Chicago Med Rec 9 3, xiv 69

Twenty-two years of goiter surgery K URBAN Zentralbl f Chir 9 3, l, 86 [116]

Should one close the wound immediately in goiter operations O URBAN Zentralbl f Chir 9 3, l, 10

Ligation of the inferior thyroid artery J L DRACO N York Surg 923, lxxv, 397

Extirpation of an enormous solid tumor of the thyroid C LACOSTE Ann stal di chir 9 3, u, 300

Recent developments in parathyroid therapy H W C VIVIAN N York M J & Med Rec 9 3, cv

4 Tumors of the parathyroid glands and their relation to osteomalacia B STRAUSS Frankfurt Ztschr f Path 923, xxvii, 39
A laryngeal case submitted for diagnosis H SCHWARTZ WARR Proc Roy Soc Med Lond 9 3, xvi, Sect Laryngol 3

A case of hoarseness due to singer's nodes J DU PONT-CHAVY Proc Roy Soc Med Lond 923, xvi, Sect Laryngol 44

A cystic laryngeal growth A WELLS Proc Roy Soc Med Lond 9 3, xvi, Sect Laryngol 44

Operative procedures in the treatment of stenosis of the larynx caused by bilateral paralysis of the abductor muscles, with special reference to a new method by means of which it is suggested that the aryepiglottic folds may be permanently enlarged and the patient decannulated I MOORE Proc Roy Soc Med Lond 9 3, xvi, Sect Laryngol 33

A plastic operation on the larynx for bilateral laryngeal paralysis A STRASSBURGER Beitr Klin Chir 9 3, cxviii, 580

The treatment of carcinoma of the larynx by operation and by radiation A G TAPPA Clin y lab 9 3, 333

The influence of local anesthesia on the mortality rate of laryngectomy J ANGL Glasgow M J 9 3, xvii, 9

The importance of infection during laryngectomy and contribution to the technique of this operation A PLECKHOFF Acta oto-laryngol, 924, iv 35

The clinical aspect of bronchial cysts H BAILEY Brit J Surg 9 3, 565

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings; Cranial Nerves

Depravity after head injury VON RAD Med Klin 923, xxi, 904

Tramatic cerebral hernia SOMMERSTROM Arch stal di chir 9 3, vi, 663

The symptoms and treatment of traumatic cyst of the cranium WAGNER Deutsche Ztschr f Chir 9 3, cxviii, 90

Osteomalacia with epilepsy A BAEVER Deutsche Ztschr f Chir 923, cxviii, 66

The importance of protein hypocoagulability in the diagnosis and treatment of a special group of epileptics R L W WALLIS W D NICOL and M GRANT Lancet 9 3, cxxv, 74

Can true epilepsy be cured or improved by roentgen treatment? M SCHWARTZ Schweiz med Wchnsch 9 3, 14 [117]

The poor results of operation on the adrenals in epilepsy H K EITNER and R WOLLENBERG Zentralbl f Chir 9 3, l, 459

The repair of defects in the dura and skull with particular attention to the permanent results in the prevention and cure of traumatic epilepsy by repair of the dura by free transplantation of fatty tissue P DAVYDOW Beitr Klin Chir 9, cxviii, 674 [117]

The control of extracranial pressure through encephalography G GARDNER Zentralbl f inn Med 9 3, xliii, 81

A modification of the technique of diagnostic pneumocephalic insufflation J TIZZANO Orvosi hetil 9, lxxv, 469

Hydatid cysts of the brain in children R A RIVAROLA Semina med 923, xxi, 57 [117]

Accidental injury limited to the base of the left frontal convolutions and motor plasma A M FIAMBERT and G FLEURY Radiology med 9 3, xxxii, 46

A case of motor aphasia secondary to lesions of the base of the left third frontal convolution (Broca's convolution) SHIMONI Arch stal di chir 9 3, vi, 666

Syphilis of the metencephalon appearing as the pontocerebellar form G GUILLAUD, T ALAJOUCARD, and R MARCOTRY Bull et mèm Soc mèd d hôp de Par 9 3, 38, xxxix, 605

Brain abscess of the temporo-sphenoidal lobe complicated with acute meningitis, operations recovery L G GILL Virginia M Month 923, l, 5

Cerebral aneurysm A LAMBERT Arch d mal d reins et d organes génitales urinaires, 9 3, 433

Cerebral tumor T DE MARTEL Bull et mèm Soc de chir de Par 9 3, xiv, 360

Isotomical tumors and the occurrence of papilloedema A E ILIN Bristol M Chir J 923, xl, 94

Tumor of the parietal lobe T FRACASIA Rev mèd d Roma, 923, xxi,

Brain tumors in young children clinical and pathological study M WOLLESTON and F H BARTLETT Ann J Dis Child 9 3, xxv, 57

A case of tumor of the cerebellum that gave negative results to tests of the labyrinth and labyrinthine tract B ROBINSON Laryngoscope, 9 3, xxxii, 57 [118]

Localized symptoms from lesion of the left parietal lobe observations in case of brain tumor treated by palliative decompression O PORTER Med Klin 9 3, xii, 7 [118]

The physiology and pathology of the pituitary body A BIRN, Munich Bergmann, 923 [118]

A case of Froehlich's syndrome with bilateral reduction of the visual fields M M AX r Septo mèd 9 3, lxx, 235

Some observations on papilloedema in children with hypophyseal syndromes and its treatment with hypophyseal and thyroid extracts F M URBAN Fapad med 923, xvi, 7

Pituitary tumors F C GRANT N York M J & Med Rec 9 3, cxvii, 49

Some neurological and therapeutic aspects of hypophyseal tumors I H PARKER N York M J & Med Rec 9 3, cxvii, 45

- An anatomo-clinical study of cases of chronic epidemic encephalitis with the Parkinson syndrome R VIZOV Poltava Roum. 9 3, xxx, sec chir 95
- Encephalitis lethargica (epidemic encephalitis) A J HALL Lancet. 9 3, cxxv, 78
- Lethargic encephalitis (epidemic) report of four cases with residual symptoms W S KELLEN N Orleans M & S J. 9 3, lxxx 600
- The frequency and importance of some of the symptoms of lethargic encephalitis R M VI Med Ibera. 9 3, 14 36
- Ocular disturbances as the first symptoms of lethargic encephalitis M M AN Segno med 9 3, lxx 356
- Further observations on epidemic encephalitis with especial reference to mental symptoms, loss of blinomial reflexes, and myelomas J S W CHURCH N York M J & Med Rev 9 3, cxxv, 458
- Early symptoms of epidemic encephalitis A BOWMAN Poltava Roum. 9 3, xxx, sec med 65
- The sequelae of epidemic encephalitis in childhood with notes on the prognosis as regards complete recovery G H AVONSON Quart J Med 9 3, xvi, 73
- The treatment of epidemic encephalitis with intracranial injection of Pregl solution V TILL and CAMP VACCI Spertentale 9 3, lxxvi, 4 9
- The characteristics of the cerebrospinal fluid in post diphtheritic paralysis J C REZA C Reza and B Wilson Ann J Dis Child 9 3, xiv, 94
- Modifications of cerebrospinal fluid pressure cranio cephalic trans G C SROGAL Arch Ital di chir 9 3, 664
- Internal hemorrhage pachymeningitis in infancy report of five cases C W BROWN and H J GIBSON Lancet J Am M Am 9 3, lxxx 604
- Cerebral pachymeningitis pachymeningitis LARON Arch de med chir. especial 9 3, sec med chir. 245
- The symptoms and laboratory findings in the clinical diagnosis and treatment of otitis meningitis H VIOUCLAND Presse med 9 3, xxi 34
- Meningitis due to Pfeiffer's bacillus J N BUTLER Brit M J. 9 3, 4 7 9
- Secondary malignant disease of the leptomeninges meningitis carcinomatosa (Collective Review) Med Sc Abst & Rev. 9 3, viii, 3
- A case of intracranial abscess of the paranasal sinuses W WATSON and J C SMITH Med Press 9 3, cxi 376
- Traumatic facial diplegia with involvement of the sixth and eighth nerves, with dislocation of the jaw etc G F K TOWN Ann Otol Rhinol & Laryngol 9 3, xxvii, 30
- The treatment of trigeminal neuralgia with alcohol injections D KUTNER Zentralbl f Chir 9 3, 1 30
- The injection of alcohol into the ganglion of the lower eyelid by widespread cranial nerve paralysis and the loss of an eye Brit J Surg 9 3, 573
- Operation in stages in the intracranial surgery of the trigeminal nerve J VILLETT Bull et mémo Soc de chir de Par 9 3, lxx 327
- A case of unilateral affection of cranial nerves 9 (Trigeminal and abducens) associated with chronic otitis media C P SYMONS Proc Roy Soc Med Lond 9 3, xvi, Sect Neurol 53
- A case of unilateral affection of cranial nerves 7 9 and C P SYMONS Proc Roy Soc Med Lond 9 3, xv, Sect Neurol 3
- An examination of the spinal accessory nerves from case of bilateral acquired myeloid neuritis C M BRAYNE Bull Johns Hopkins Hosp Balt 9 3, lxxxv, 5

Spinal Cord and Its Coverings

- Paralytic accidents from tuberculous meningitis appearing long after wound of the spine L TAVERNIER Bull et mémo Soc de chir de Par 9 3, lxx 32
- A case of syringomyelia B A K WILSON Proc Roy Soc Med Lond 9 3, xvi, Sect Neurol 49
- A case of syringomyelia with much sensory and motor impairment and little wasting C M H BOWELL Proc Roy Soc Med Lond 9 3, xvi, Sect Neurol 50
- The roentgen findings in tumors of the spinal cord M SULLIVAN and S JATROU Bull d Gynecol et d Med Chir 1932, xxvii, 509 [119]
- A case of psittacosis affecting the spinal cord and meninges A G HAMMILL J Roy Army Med Corps Lond 9 3, xl, 207

Peripheral Nerves

- Union of the nerve of the rat in parabiosis MOORE Arch Ital di chir 9 3, 4 636
- Recurrent paralysis from brachial injury Texas Press med Par 9 3, xvi, 356
- On the clinical identification of pathologic changes in the nerve of nerves I J CYRUS Med Press, 9 3, xxi cxi 366
- A case of hypertrophic peripheral neuritis (thrombosis) F G HOMER Lancet, 9 3, cxi 708
- A simple method for demonstrating motor paralysis of the lower extremities with special reference to Hoover sign T B THORNTON J Am M Am 9 3, lxxx 608
- The treatment of injuries of the peripheral nerves P J STRAIN Verhandl d Rom Chir Pirogoff Ges Petrograd 9 3, 119
- The operative technique in injuries of peripheral nerves W R CANNON 9 3, Chir Arch 9 3, 33
- Regeneration of nerves in experimental tissue W M VANDER VERHANDL d Rom Chir Pirogoff Petrograd 9 3, 120
- A new contribution upon unilateral nerve palsy D MARAZZI Arch Ital di chir 9 3, vi 709
- The etiology of neurofibromatosis M A KOWEN Arch Neurol Med Westk 9 3, 44
- The pathogenesis of trophic-neurotic skin and bone changes and new attempt at their surgical treatment A G MOGENSEN Verhandl d Rom Chir Pirogoff Ges Petrograd, 9 3, 120

Sympathetic Nerves

- The etiology and treatment of pericardial nerve of the foot with remarks on sympathetomy M KAYNE Ann Chir-chir 9 3, 513
- Periarterial sympathetomy in spontaneous gangrene W N SCHUMMER Westk Chir 9 3, 44 [121]
- Vaso-sympathetomy in peripheral gangrene (ALA de Arch Ital di chir 9 3, 1 609)

Miscellaneous

- A new method for lumbar puncture of also for cerebrospinal research I BERNARD Arch Ital di chir 9 3, 460
- Lumbar puncture M PIERRETTA Arch Ital di chir 9 3, 460
- Lumbar spinal puncture and cerebral puncture J J KERR and T E KERR Nebraska State M J 9 3, viii 28 [122]

On the danger of leakage of the cerebrospinal fluid after lumbar puncture B. IVONAR. *Acta med Scand* 93, 174, 67 (122)

The leakage of the spinal fluid after lumbar puncture and its treatment H. C. JACOBSEN and K. F. MERTZ. *Acta med Scand* 93 174, (123)

SURGERY OF THE CHEST

Chest Wall and Breast

- Generalized emphysema from lesion of the thorax SEARANT Arch Ital di chir 93, 4, 658
 Demonstration of two cases of extensive thoracoplasty BEAVER Zschr f Kranke 93, 4, 309
 Has thoracoplasty place in therapeutics? G. LITKE Zschr f med u. Verwundung 93, 30
 Suppurative arthritis simulans acute appendicitis J. A. BIRN Lancet 93, 4, 450 (124)
 The so-called hernia in the mammary areola G. L. MORRIS Am J Obst & Gynec 93, 304
 Hyperplasia of epithelial and connective tissue in the breast its relation to fibro adenoma and other pathologic conditions G. L. COX Tr. Brit J Surg 93, 4, 436
 The clinical picture of dilated ducts beneath the nipple frequently to be palpated as doughy oozing like mass the varicose tumor of the breast J. C. BLOOMBERG Surg, Gynec & Obst 93, 3, 371, 436 (124)
 Tumors of the male breast H. F. LITWOLD Habermas Monats 93 174, 33
 Radium in carcinoma of the breast, necessary pre-operative routine G. S. WILLIS N York M J & Med Rec 93, 4, 433
 Operative treatment of cancer of the breast L. DIETZ Bull et mem Soc de chir de Par 93, 4, 313, 5
 Local recurrence after operations for carcinoma of the breast L. CARRER Zentralbl f Chir 93, 4, 7
 Postoperative swelling of the upper extremity following operations on the breast and axilla W. L. HARTMAN Boston M & S J 93, 4, 433, 477

Trachea, Lungs, and Pleura

- Diseases of the respiratory system (Collect. Review) Med Sc Abst & Rev 93, 7, 3
 Foreign bodies of unusual interest removed from the air passages P. P. IVONAR Minnesota Med 93, 4, 360
 Epithelioma of the upper air passages B. M. KULL Nebraska State M J 93, 4, 35
 The choice of tracheal cannula P. J. MIV Arch f klin Chir 93, 4, 56
 Spontaneous subcutaneous hernia of the left lung M. CLAIRE and F. TR. B. CHART Bull et mem Soc de chir de Par 93, 4, 33
 The determination of lung volume without forced breathing D. D. VAN SETZEL and C. A. L. BIVERT J Exper Med 93, 4, 47
 Observations on the total lung volume and blood flow following pneumectomy W. D. W. ARDE Bull Johns Hopkins Hosp Balt 93, 4, 33
 Idiopathic spontaneous pneumothorax apparently non-tuberculous I. B. HART J Am M Ass 93, 4, 40
 Two cases of recurrence of spontaneous pneumothorax showing on thoroscopic examination the site of the perforation on the lung H. D. ALSTON and M. HAZEN Acta med Scand 93, 4, 43
 A detail of technique in free vent by artificial pneumothorax G. F. CAMP. vi Polichin Rome, 93, 4, 33, 34
 Contribution on the technique of pneumothorax S. FULVIGNI Polichin Rome, 93, 4, 33, 34

- The interpretation and diagnosis of gross lesions of the lungs R. H. HAAS Illinois M J 93, 4, 34
 Observations on the treatment of pulmonary hemorrhage by artificial pneumothorax M. J. FINE J Med Soc N Jersey 93, 4, 9
 Hydatid cysts of the lungs and pleura R. HALARA Surg, Gynec & Obst 93, 4, 354
 Abscess of the lung W. W. BOWEN J Iowa State M Soc 93, 4, 4
 Non tuberculous pulmonary abscess W. WHITMAN Boston M & S J 93, 4, 433, 44
 Phrenotomy in the treatment of pulmonary tuberculosis A. V. FINEZ Klin Wchnsch 93, 7
 Bronchial fistula W. GUER Deutsche Zschr f Chir 93, 4, 39
 Malignant tumors of the lung V. MONTENEGRO Prox de la chim Madrid, 93, 4, 39
 T. cases of primary carcinoma of the lung G. TRIVIT Arch de med chir et spec 93, 4, 38
 Report on a case of secondary carcinoma of the lung with pulmonary tuberculosis J. T. SCOTT Virginia M Month 93, 4, 39
 Extraction of tooth brush from the right pleural cavity AUYRA Bull et mem Soc de chir de Par 93, 4, 33
 Pleural effusions J. D. STEINBERG and W. H. W. TROY North est Med 93, 4, 9
 T. cases of hemorrhage after cauterization of pleural adhesions by the Jacobson method H. DUNSTON Acta chirurg Scand 93, 4, 407
 Pleural pressure and lung collapse in artificial pneumothorax G. BRONCHI Polichin Rome 93, 4, 33, 34
 Empyema thoracis H. P. BROWN J Am Surg 93, 4, 40
 Acute empyema J. M. EMMETT Internat J Surg 93, 4, 418
 Chronic empyema from foreign body pneumolysis recovery MARGIELA Arch Ital di chir 93, 4, 659
 Recent progress in the treatment of chronic empyema C. A. HENDERSON North est Med 93, 4, 5
 Experience with the Mazono method of treatment for empyema A. L. F. KIRK J Missouri State M Ass 93, 4, 32
 The surgical management of empyema G. B. RICHARDS Canadian J M 93, 4, 66
 Opening the peritoneum in operations for empyema H. L. BRYE J Am M Ass 93, 4, 40, 7
 Primary cancer of the pleura in man and wife A. JONKOV Acta med Scand 93, 4, 33, 34 (125)

Heart and Pericardium

- A stab wound of the right ventricle critical, transverse thoracotomy, nature of the heart, recovery J. VIAL Bull et mem Soc de chir de Par 93, 4, 33, 35
 Operation in two cases of cardiac wounds F. BURIA Casop lek Cesk 93, 4, 33
 Spontaneous rupture of the heart C. TRIVITELLO Riforma med 93, 4, 33
 Histological investigations on the influence of anoxia and operation upon the wall of the heart C. MULLER Fortsch d Geb d Roentgenstrahlen, 93, 4, 33

- Myocardial deficiency from surgical standpoint J. L. VATER, M. F. ROGERS, and R. E. MORTER. *Wisc Med J.* 923, xxi, 483.
- Endocarditis with gangrene of both legs and an infarct of the lung J. HIRSHMANN. *Practitioner* 93, 45.
- T. cases of aneurysms of the pericardium without wound of the heart. V. G. BULL. *Bull et mémoires Soc de chir de Par* 93, xix, 483.
- A case of hemopericardium without a wound of the heart. M. G. BULL. *Bull et mémoires Soc de chir de Par* 93, xix, 4.

Oesophagus and Mediastinum

- Foreign bodies in the oesophagus. Von ECKARD. *Med Klin* 93, xix, 37.
- Observations on the art and technique of bronchoscopy and oesophagoscopy. T. HIRSHMANN. *Ann Otol Rhinol & Laryngol* 923, xxii, 305.
- A small diverticulum of the oesophagus causing severe dysphagia removed at one operation recovery. P. PROCTER. *Bull et mémoires Soc de chir de Par* 93, xix, 408.
- Oesophageal diverticula. BEYLAND. *Arch ital di chir* 93, vi, 647.
- Rare phases of oesophageal stenosis. R. McKIN. *Ann Otol Rhinol & Laryngol* 923, xxi, 977. [126]

- Strangrene showing simple fibrous strictures of the oesophagus in child. A. RIVERO. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 42.
- The treatment of stricture of the oesophagus. G. LÖNNBERG. *Zentralbl f. Chir* 93, i, 43.
- A retrograde oesophageal bougie. G. TUCKER. *Atlantic M J.* 93, xvi, 40.
- Severe hemorrhage an occasional cause of death in cyphobes of the oesophagus. M. W. GREEN. *Surg Clin N Am.* 93, li, 33.
- A case of oesophageal cancer perforating into the trachea. T. M. MADRIVERTIA and S. P. G. OMCOTY. *Proc de la clin Madrid*, 923, xiv, 366.
- Experimental surgery of the thoracic oesophagus. R. T. MULLER, J. and W. D. W. AUSTON. *Bull John Hopkins Hosp Balt* 93, xxiv, 99.
- An atypical lymphoma of the mediastinum. M. VALLAS and COLONICO. *Bull et mémoires Soc méd d'hyg de Pa* 93, 31, xxiix, 503.

Miscellaneous

- Thymoma. E. LYNNER and A. PRINDEL. *Arch f path Anat. Physiol* 93, cxix, 475.
- Refract fractures in old chest wounds. A. V. COR. *Lancet*, 93, cxiv, 693.
- Death from progressive amyotrophy. C. G. McDONALD. *Med J Australia*, 1933, li, 440.

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- Maen's ventral hernia. H. S. VILLARS. *Ann Surg* 923, lxxvii, 445.
- A case of umbilical hernia. B. V. RYCKOFF. *Brit J Surg* 923, x, 579.
- The treatment of strangulated obturator hernia. A. R. STUART. *Brit M J.* 923, i, 718.
- A new operation for femoral hernia. E. ANDERSON. *Illness M J.* 93, xlii, 300.
- Operation for the radical cure of femoral hernia. F. W. HIR. *Gaucha Brit J Surg* 93, 379. [127]
- Inguinal hernia in the male. S. ECKMAN. *Ann Surg* 93, lxxvii, 7.
- The radical operation for hernia in infants. H. MAAS. *Klin Wochenschr* 1933, 376.
- The local anesthetic in herniotomy. O. BLOCH. *Kes today M J.* 93, xxi, 304.
- Changes in the peritoneum following the entrance of urine and feces into the peritoneal cavity. CAKSONA. *Arch ital di chir* 93, vi, 648.
- The pathogenesis of biliary effusion in the peritoneum without perforation of the biliary tract. DOMROVITZ. *Arch ital di chir* 93, vi, 648.
- One peritonitis. H. STROFKA. *Arch f klin Chir* 93, cxix, 83.
- Tuberculous peritonitis with large ascitic effusion, con- siderant lesions of the retractile mesentery laparotomy amebiotomy. J. DUBOIS. *Bull et mémoires Soc de chir de Par* 93, xix, 33.
- The treatment of peritonitis with different solutions. BOUTET. *Arch f klin Chir* 93, cxix, 358.
- The principles of surgical treatment of infection of the peritoneum. F. FASSER. *Bristol M Chir J.* 93, xi, 39. [128]
- Experimental investigations on the gastro-intestinal movements in acute peritonitis. L. ARAT. *Arch f exper Path Pharmacol* 93, xiv, 40. [128]

- Subcutaneous abdominal emphysema following laparotomy. R. VINCIG. *Rev de med y chir de la Habana*, 923, xxiix, 7.
- Studies of the great omentum in man. E. SEITZ. *Arch f klin Chir* 93, cxix, 608.
- Torsion of the great omentum. C. LEROUX. *Bull et mémoires Soc de chir de Par* 93, xix, 73.
- A large epiploic cyst developed about fragment of rubber sound. E. KRONER. *Bull et mémoires Soc de chir de Par* 93, xix, 313.
- A blood cyst of the great omentum ruptured into the free peritoneal cavity operation recovery. A. CHALIER. *Bull et mémoires Soc de chir de Par* 93, xix, 86.
- Inflammatory tumors of the omentum. R. LEVINSKY. *Surg Clin N Am.* 93, li, 52.
- Five cases of retractile mesentery. DUBOIS. *Bull et mémoires Soc de chir de Par* 1923, xix, 49.
- The retractile mesentery. HALLORAN and M. A. CLARK. *Bull et mémoires Soc de chir de Par* 93, xix, 478.
- A case of sarcoma of the mesentery successful removal involving resection of the ascending colon and 37.5 cm of the ileum, with pathologic report. G. BRILL. *Med J Australia* 93, li, 375.
- Postoperative acute abdominal adhesions. R. H. SEITZ. *Boston M & S J.* 1923, cxviii, 489.
- The diagnosis of abdominal adhesions. C. W. STUCK. *Litt South M J.* 93, xvi, 37.

Gastro-Intestinal Tract

- Gastro-intestinal changes from 196 to 199 in the male wards of the Obachoff Hospital. M. A. GONCHARENKO. *Vestnik gosudarstvennogo D. D. Obachoff Obshchestva v Petrograd*, 923, i, 91.
- Diarrhea and disturbances of digestive function. D. U. SILVERMAN. *N. Orleans M & S J.* 1933, lxxv, 92.
- Röntgenology of the alimentary tract. M. J. HARRIS. *Chicago Med Rec* 923, xiv, 63.

- A textbook and atlas of gastroscopy R SCHWARTZ.
Munich Lehmann, 923
- The value of gastroscopy SKERFVING Mitt. d.
Grensegeb. d. Med. Chir. 923, xxvii, 4
- Progress and retrogression in gastroscopy SKERFVING.
Acta chirurg. Scand. 923, lv, 363
- The classification of gastro-intestinal disturbances J A.
BAILEY Rev. med. d. Uruguay 923, x, 32
- The question of gastric hormone R K S LIM
Quart. J. Exper. Physiol. 922, xii, 79
- The diagnosis in the chronic dyspepsias C S NIC
VIGAS Canadian Pract. 923, xlviii, 37
- A contribution to the surgical treatment of toxic
dyspepsia C A PARKETT Brit. J. Surg. 923, x, 358
- Distention of the stomach from the surgical viewpoint
A W HANCOCK Med. Times, 923, li, 9
- Compression of the stomach from high lying colon
A H KORSAKY Muenchen med. Wchschr. 923, lxx,
149
- Congenital hypertrophy of the pylorus G F STELL
Brit. M. J. 1923, 579 [128]
- Hypertrophic pylorostenosis misdiagnosed—a semi-clinical
commentary L R ELLIOTT Internat. J. Surg. 923,
xxvii, 30
- A calcified hydatid cyst of the lesser curvature and the
lesser omentum extirpation SAVARILLO Bull. et mêm.
Soc. de chir. de Par. 923, xlix, 367
- Syphilis of the stomach W M KARATZOFF Siberian
Med. J. 923, p. 35 [129]
- Fibrosis of the stomach A J BLACKLAND Brit. J.
Surg. 923, x, 45
- Gastro-colic fistula G P PRATT Ann. Surg. 923,
lxviii, 433
- The histology of the stomach predisposed to ulcer L.
MORROW Arch. f. klin. Chir. 923, cccc, 444
- A statistical inquiry into the efficiency of present-day
methods of diagnosis of ulcers of the stomach and duo-
denum, and into the value of gastrojejunostomy in their
treatment A YOUNG, A J HUTTON, and J S BLACKMAN
Lancet, 923, cccv, 68
- The diagnosis of peptic ulcer and its bearings on treat-
ment T CAR ARDORX Bristol M. Chir. J. 923, xl, 7
- Old and new acids in the differentiation of ulcer and can-
cer of the stomach E PATR Zentralbl. f. Chir. 923,
xlix, 706 [129]
- Gastric and duodenal ulcer: medical and surgical as-
pects, pre-operative and postoperative treatment J R.
TURNER, J. Northwest Med., 923, xxx, 36
- Ulcer of the stomach as a cause of fever E McVILLER
Mitt. d. Grenzgeb. d. Med. Chir. 923, xlviii, 433 [129]
- Peptic ulcer J H PIERRE J. Arkansas M. Soc. 923,
xxx
- The experimental production of peptic ulcer F C
MAYN and C S WILLIAMSON Ann. Surg. 923, lxxviii,
409
- T cases of gastrojejunal ulcer VACCATE and SOLDE
VILLA Med. Retha, 923, x, 30
- The presence of thrombi in chronic gastric ulcer: hemor-
rhagic erosions and gastric carcinoma A HARTWICK
Arch. f. path. Anat. Physiol. 923, cccix, 6
- Hour glass contraction of the stomach W A DOWNES
Surg. Clin. N. Am. 923, x, 343
- The results of the medical treatment of gastric and
duodenal ulcer A A VILLIERS Acta med. Scand. 923,
lxii
- The treatment of chronic gastric and duodenal ulcers
G HOLLER Med. Klin. 923, x, 379
- A consideration of 30 cases of gastroduodenal ulcer
treated personally Chir. v. Arch. ital. di chir. 923, vi,
700
- X ray treatment of peptic ulcer J KOTTMAYER
Fortchr. d. Med. 923, xli, 4
- X-ray treatment of gastric ulcer O STRUBEN Deutsche
med. Wchschr. 923, xlix, 4
- The healing of gastric ulcers and associated lesions by
deep X ray therapy A SCHULTZ-BERON Strahlenthera-
pie, 923, xiv, 690
- A contribution to the surgery of the stomach and duo-
denum F ROSS Arch. ital. di chir. 923, vi, 700
- The surgical treatment of ulcer of the stomach and
duodenum H FROSTENBERG Surg. Gynec. & Obst. 923,
xxvii, 454 [130]
- The surgical treatment of ulcer of the stomach and
duodenum E HANDELMAN Fortchr. Schw. Lach-Schellak
Sammlung 923, xliii, 67, 309
- Recurrence of gastric ulcer after suture of the mucous
membrane with silk O WUNDERER Zentralbl. f. Chir.
923, li, 4
- A new method pyloric exclusion K LUTZ Zentralbl. f.
Chir. 923, li, 469
- An experimental study upon exclusion of the pylorus
G CASTRA Arch. ital. di chir. 923, vi, 699
- Hernia of the wall of the stomach at the level of suture
occluding the pylorus HARTW. v. Bull. et mêm. Soc.
de chir. de Par. 923, xlix, 36
- A new tip for gastroduodenal tubes E HOLLANDER
J. Am. M. Ass. 923, lxxx, 7
- A case of inverted pylorus obstructing gastrojejunal
anastomosis J McCLELLAN and H L CLARKSON
Lancet, 923, cccv, 750
- Resection of gastric ulcer P BARTL VIELL Arch. ital.
di chir. 923, vi, 702
- The operative prophylaxis of recurrence of pyloric and
duodenal ulcer and of the development of peptic ulcer of
the jejunum J LUTZ Arch. Gynäk. Obst., 923, p. 683
- Perforated ulcer of the stomach CANNAR and DE
MARCEL Bull. et mêm. Soc. de chir. de Par. 923, xlix,
399
- Perforated ulcer of the stomach A BARNET Bull. et
mêm. Soc. de chir. de Par. 923, xlix, 557
- A case of perforation of gastroduodenal ulcer Gax
STARR Arch. ital. di chir. 923, vi, 698
- Prepyloric callosities ulcer perforation, suture: gastro-
enterostomy recovery DROGOSCH Bull. et mêm. Soc.
de chir. de Par. 923, xlix, 305
- Three cases of gastric ulcer perforated into the free
peritoneal cavity R MORON Bull. et mêm. Soc. de chir.
de Par. 923, xlix, 337
- Perforated ulcer of the stomach, resection and suture
eighteen hours after perforation recovery G DUBRELL
Bull. et mêm. Soc. de chir. de Par. 923, xlix, 40
- Perforated gastric and duodenal ulcers LACIVRE Bull.
et mêm. Soc. de chir. de Par. 923, xlix, 30
- The practical significance in acute peritoneal syndromes
of intra abdominal air under pressure, sign of gastric and
duodenal perforation CHATON Bull. et mêm. Soc. de
chir. de Par. 923, xlix, 3
- The treatment of gastric ulcer perforated into the free
peritoneal cavity KUMMER Bull. et mêm. Soc. de chir.
de Par. 923, xlix, 344
- The treatment of ulcers of the stomach perforated into
the free peritoneal cavity R BARTT Bull. et mêm. Soc.
de chir. de Par. 923, xlix, 5
- A case of perforated ulcer of the lesser curvature treated
by suture of the perforation without gastro-enterostomy
recovery TALLERER Bull. et mêm. Soc. de chir. de
Par. 923, xlix, 383
- Improved surgical treatment of duodenal and gastric
perforations DILLARVIER Bull. et mêm. Soc. de chir.
de Par. 923, xlix, 34

Radical treatment of acute gastric perforations, particularly of carcinoma associated with cholelithiasis. A. SUTTOR. *Schweiz med Wchnsch* 1923, lxx, 95.

Operative results in acute gastric and duodenal hemorrhage. H. FRANTZ. *Wien klin Wchnsch* 1923, lxxv, 93.

Malignant fibrochondroma of the stomach. CHARTIER and RAOU. *Bull et mèm Soc de chir de Par* 1923, lxxv, 488.

The typical forms of carcinomas of the stomach. CARVOT. *Prog de la chn Madrid* 1923, xxi, 477.

The roentgen ray as an adjunct in the treatment of advanced cases of carcinoma of the stomach. C. R. ROYAL. *Virginia M Month* 1923, l, 33.

The surgical treatment of cancer of the stomach. J. H. M. TROYA. *Flower Report de med y cirug* 1923, x, 269.

The Billroth I method of stomach resection. SCHÖN. *Arch f klin Chir* 1923, cxi, 303.

Three cases of gastrectomy. D. ACCORIO. *Arch ital di chir* 1923, vi, 669.

Radical operation on the stomach, with especial reference to mobilization of the lesser curvature. W. J. M. TO. *Surg Gynec & Obst* 1923, lxxv, 447.

A few remarks regarding the character of digestion after operations on the stomach and intestines. W. F. D. WOLFE. *Nantschynje Szepesi Tuhelovo Góbalda* 1923, p. 23.

The personality of the intestinal success to certain types of bacteria determined by cultures from the thoracic duct. C. S. WILLIAMS and R. O. BROWN. *Am J M Sci* 1923, cliv, 480.

Studies in fat digestion. M. V. NOLL. *California Stat J M* 1923, xxi, 108.

Internal hernia following posterior gastro-enterostomy with acute dilatation of the stomach as a sequence to reduction. W. T. WARRICK. *Brit J Surg* 1923, x, 577.

A pedunculated carcinoma of the small intestine causing, by its rupture, violent internal hemorrhage. BERT. *Bull et mèm Soc de chir de Par* 1923, lxxv, 75.

Stercoral cutaneous fistula of the small intestine ileocolic anastomosis, resection of the fastened loop, recovery. H. COSTAVAL and H. DUBOCHET. *Bull et mèm Soc de chir de Par* 1923, lxxv, 412.

A case of intestinal strang. C. D. MATHIAS. *Brit M J* 1923, l, 7.

Intestinal obstruction, with several case reports. L. I. MILLER. *Colorado Med* 1923, xxi, 60.

Spastic ileus in grape. F. COLANERI. *Zentralbl f Chir* 1923, lxxv, 83.

Ileus from cystic lymphangoma near the small intestine. L. SCHNEIDER. *Med Klin* 1923, xix, 808.

The relationship between intestinal obstruction, chronic peritonitis, and chronic multiple ascositis. C. N. DOWD. *Ann Surg* 1923, lxxv, 433.

Toxic factors in intestinal obstruction. T. G. OHR. *Med Herald* 1923, x, 212.

Acute intestinal obstruction in swine. A. REICHER. *Deutsche med Wchnsch* 1923, lxxv, 386.

Unusual chronic invagination of the small intestine. O. HAAKROHN. *Deutsche Ztschr f Chir* 1923, clxxv, 407.

Intussusception—some points in diagnosis and plea for earlier recognition. F. CLARKE. *Nevada State M J* 1923, vi, 142.

Intussusception with report of four cases. L. D. EVOLVING and F. E. KILLIAN. *Therap Gaz* 1923, 35.

Intestinal intussusception. ALGALVE. *Bull et mèm Soc de chir de Par* 1923, lxxv, 450.

Intestinal intussusception in the course of an acute enterocolitis. N. LEOV. *Bloem Rev med d Uruguay* 1923, lxxv, 137.

A case of chronic intussusception. G. A. EWART. *Brit M J* 1923, l, 639.

The treatment of intestinal intussusception. ZAKHAROV. *Russklye v chir gymek* 1923, x, 95.

Intestinal intussusception operated upon, probably recurrence. PIVOT. *Bull et mèm Soc de chir de Par* 1923, lxxv, 37.

Duodenal gastric mobility. T. B. KROVY. *Wien klin Wchnsch* 1923, lxxv, 96.

The painful points of the subhepatic constriction and duodenal ptosis. F. RAYON and G. PARFITTIER. *Presse med* 1923, p. 333.

Diagnostic applicability of the duodenal tube. WINTERSTEIN. *Arch f klin Chir* 1923, cxi, 395.

Mesenteric occlusion of the duodenum and acute dilatation of the stomach. A. BRAY. *Brit M J* 1923, clxxv, 103.

Chronic duodenal ulcer. S. BARRERO. *Brit J Surg* 1923, x, 50.

Clinical and experimental data on chronic duodenal ulcers. W. KORVETZ and H. MERTZ. *Deutsche Ztschr f Chir* 1923, clxxv, 70.

Experimental investigations regarding duodenal obstruction and stasis of the stomach. W. KORVETZ. *Brit M J* 1923, clxxv, 608.

Duodenal ulcer. M. F. DAVIES. *Northwest Med* 1923, xxi, 101.

Duodenal ulcer. CURRIER. *Arch ital di chir* 1923, vi, 701.

Duodenal ulcer. V. ASCOLI. *Arch ital di chir* 1923, vi, 667.

An improved method for the diagnosis and localization of duodenal and gastric ulcers. S. L. CASE. *N York M J & Med Rec* 1923, clxxv, 473.

The relative value of X-ray evidence in the diagnosis of duodenal ulcer. C. D. EVERTON. *J Radiol* 1923, iv, 27.

Partial obstruction of the duodenojejunal junction by cause of ulcer of the duodenum. E. F. SGOA. *J Am M Ass* 1923, lxxv, 977.

Complication of duodenal ulcer. N. P. DAVIS. *Atlantic M J* 1923, lxxv, 464.

Perforated duodenal ulcer, duodenopylorostomy, death on the seventh day. ALARIN. *Bull et mèm Soc de chir de Par* 1923, lxxv, 307.

Perforated duodenal ulcer with report of three recent cases. M. W. HAWTH. *Gen Hosp Bull Detroit* 1923, x, 2.

The diagnosis and treatment of duodenal and gastric ulcer. E. M. ELLIOTT. *Canadian M J* 1923, xxi, 30.

When should one operate upon a duodenal ulcer? S. CARON. *Arch de med cirug* 1923, x, 20.

Simple perforating ulcer of the jejunum. CHAMBERLIN. *Arch ital di chir* 1923, vi, 690.

Peptic ulcer of the jejunum. JEVICH and SCHNEIDER. *Deutsche Ztschr f Chir* 1923, clxxv, 317.

Do some of our hitherto used methods of operative procedure prevent with certainty the recurrence of peptic ulcer of the jejunum. HARRISON. *Arch f klin Chir* 1923, clxxv, 334.

Acute obstruction by Meckel's diverticulum with symptoms resembling appendicitis. J. W. HERRICK. *Brit M J* 1923, l, 70.

Congenital and acquired deformity of the ileocecal appendicular fold as a cause of the ileocecal stenosis of position. S. SULLER. *Arch ital di chir* 1923, vi, 690.

- Deoecrotic resection. *CANCER Arch ital di chir* 9 3, 4, 69
- Recurring ileocecal intussusception: report of case complicated by tuberculous of the intestine. *MI THOMAS J Am M Ass* 923, 1877, 663
- Abnormalities of fixation of the ascending colon: the relation of the symptoms to the anatomical findings. *A A MCCONVILLE and T G HARRIS Brit J Surg* 9 3
- 33 Congenital idiopathic dilatation of the colon. *D FIRM and K. PLA Ann Arch Radiol & Electrotherap* 9 3, 33, 35
- Megacolon. *A A MATTHEW Northwest Med* 9 3, 33, 35
- Fecal concretions, their removal by the natural route. *R. FROCHETTO Semana med* 923, 33, 673
- The pathogenesis of mucocutaneous neuro-cystitis. *C J DIXE Niglo med* 923, 33, 303 [127]
- Intestinal obstruction by an unusual form of enterolith. *B S SHAW Edinburgh M J* 9 3, 33, 76
- The treatment of chronic intestinal stenosis by ceco sigmoidostomy. *C LEROUX Presse med Par* 9 3, 33, 173 [127]
- A case of intestinal occlusion treated and cured by an artificial vaginal anus. *A J BERGALL Bull et mem Soc de chir de Par* 9 3, 33, 307
- The surgical treatment of chronic ulcer of the colon. *H B BROW Ann Surg* 9 3, 33, 303 [127]
- Subcutaneous rupture of the intestine. *R P ROWLANDS Brit M J* 9 3, 33, 76
- The histopathology of the intestine in cholera. *L W GOODPASTURE Philippine J Sc* 9 3, 33, 43
- A poisonous constituent of cholera stools. *E W GOODPASTURE Philippine J Sc* 9 3, 33, 430
- The diagnosis of intestinal parasitic infection. *T D D Vm Virginia M Month* 9 3, 33, 36
- Gas cysts of the intestine. *MATTEOLA Arch ital di chir* 923, 4, 693
- Intestinal gangrene as a complication of typhoid. *A GREGORY Zentralbl f Chir* 9 3, 33, 507
- Cancer of the colon. *R P SMITH Am J M Sc* 923, 33, 503
- The results of crushing and burying the ends of the intestine in man. *J OXLEY and G D ALLAN Bull et mem Soc de chir de Par* 9 3, 33, 555
- The utilization of the rubber catheter in intestinal anastomosis. *F J HORN Surg Gynec & Obst* 9 3, 33, 56
- An experimental study on the returning of non periton and sections of intestine following resection. *F M Vm and M GARA Zentralbl f Chir* 9 3, 33, 555 [127]
- The spontaneous formation of anastomosis of the intestine. *L BERGALL and Z. SCHLUD Wochenschr* 923, 33, 566
- 34 The morphology of the human cecum. *E JACOMINOV Amst Ana* 9 3, 33, 57
- Atrophy of the cecum. *E F Vm Rev med de la Semana Roma* 9 3, 33, 58
- Shedding intestine of the cecum and appendix in children. *V C D Vm Ann Surg* 9 3, 33, 538
- A residual encapsulated abscess as the cause of abdominal pain after operation on the cecum. *M COOK Zentralbl f Chir* 9 3, 33, 538
- Hernia of the appendix. *J LARSEN YARMONDO Arch de genec obst y pediat* 923, 33, 538
- Actinomycosis of the appendix. *C J MACGILL, J Surg Cho N Am* 923, 33, 538
- Appendicitis: its diagnosis and treatment. *W J MOORE Glasgow M J* 9 3, 33, 538
- Appendicitis in children. *J GARRIDO LASTACHE Pediat* 9 3, 33, 538
- Trauma and appendicitis. *B P SAN ALA Brit M J* 9 3, 33, 538
- Pulmonary tuberculosis and appendicitis. *A ARMSTRONG Atlantic M J* 9 3, 33, 538 [127]
- A case of cystic appendicitis. *LARSEN and DYLANNE Bull et mem Soc de chir de Par* 9 3, 33, 538
- Mucoid casts from the appendix. *L COBBITT Md D M M J Path & Bacteriol* 923, 33, 538
- Embryonic mucocoele of the appendix: cystic type of chronic catarrhal appendicitis. (A report of case. *W R MERRISON Boston M & S J* 9 3, 33, 538
- Some observations on the large mononuclear cells in chronic appendicitis. *L O DUTTO J Lab & Clin Med* 9 3, 33, 538
- The leucocyte count in the diagnosis and prognosis of appendicitis. *H W RICE J South Carolina M Ass* 9 3, 33, 538
- Hematomas and appendicitis. *J J STETSON Zieglar f Urol* 923, 33, 538
- Hematoma in appendicitis. *L CARRISAN Arch de med chir* 9 3, 33, 538
- Acute gangrenous or perforating and suppurative retrocecal appendicitis. *J N JACKSON South M J* 9 3, 33, 538
- Ruptured appendix with general peritonitis simulating ruptured gastric ulcer. *J I CONNORS Surg Clin N Am* 923, 33, 538
- Some observations on the treatment of acute appendicitis. *J M LOV Brit J Surg* 9 3, 33, 538
- Chronic appendicitis: its differential diagnosis and treatment. *F B GIBBS Canadian M Ass J* 923, 33, 538
- Does chronic appendicitis exist such from the beginning. *D TADDEI Polichin Roma* 9 3, 33, 538
- 35 The clinical importance of the chronic changes in the appendix: which are discovered by the roentgen ray. *I W WATTS Boston M & S J* 9 3, 33, 538
- Perforated appendicitis. *O L PASTORE Illinois M J* 923, 33, 538
- Locating the appendix vermiformis technique. *W V V. HOOD Boston M & S J* 9 3, 33, 538
- Practical advice with regard to the diagnosis and treatment of diseases of the digestive tract. The cause of the pain frequently persisting after appendectomy. *L WATTS Deutsche med Wochenschr* 923, 33, 538 [127]
- On septicemic infection following operations for appendicitis prophylactic serum. *H H BROWN Brit M J* 9 3, 33, 538
- Adenocarcinoma of the appendix. *A O THOMAS Brit M J* 9 3, 33, 538
- A case of multiple chylous cysts of the descending colon. *H POOK Klin Wochenschr* 9 3, 33, 538
- The closure by collection of an artificial anus in the descending colon secondary drainage of left perinephatic hernia. *CH TON Bull et mem Soc de chir de Par* 923, 33, 538
- Fibrosis of the mesentery of the sigmoid. *A LARSEN Presse med Par* 9 3, 33, 538
- Diverterculitis of the sigmoid. *M A ANDERSON Pracitioner* 9 3, 33, 538
- A case of erosion of the rectum by an ectopic placenta. *J A C FORBES Lancet* 9 3, 33, 538
- Villous papilloma of the rectum, its case report. *H B ADAMS Massachusetts M J* 923, 33, 538
- The treatment by radiation of cancer of the rectum. *H H BROWN and J W ANDERSON Am J Roentgenol* 9 3, 33, 538

Circular suture of the section following resection. K KROCH. *Russkiedy v chir.* 1923, 11, 30.

The etiology and pathogenesis of anal pruritus and pruritus ani. J F MONTAGUE. *N York M J & Med.* Rec. 1923, 19, 469.

The non-surgical treatment of hemorrhoids in post-surgical stricture. M C PRUITT. *J Med & Georgia* 9, 1, 22, 35.

Anesthesia in operations upon the anus. G ZORRAGUT. *Seminat med.* 1923, 11, 773.

Liver Gall Bladder Pancreas, and Spleen

A contribution to the study of the function of the liver with reference to the fats. F GAULT. *Riforma med.* 9, 2, 1923, 4.

Hepatitis, cholecystitis, hydrops of the gall bladder. C G HERR. *Surg Clin N Am.* 9, 3, 1923, 373.

The pathology of biliary bile secretion. GROSSMANN. *Arch f klin Chir.* 9, 1923, 364.

Non-parasitic cysts of the liver and bile passages. L SCHROEDER. *Presse med.* 1923, 1923, 376.

Non-parasitic cysts of the liver especially solitary acropylous cysts. *Amolecular cystadenoma.* O MARGARET. *Publ. in Rome*, 1923, 1923, 376.

Hepatic cyst with intracystic bile passages. E LANGE. *Zentralbl f Chir.* 9, 3, 1923, 376.

Accumulations of the liver and the bile ducts. G L MARTIN. *Arch intern.* 1923, 1923, 376.

Certain developmental stages of some biliary diseases in the liver tissue. C MONTAGUT and C ARNAT. *Philippine J Sc.* 1923, 1923, 376.

Hydatid cyst of the liver. G ARNAT. *Arch intern.* 1923, 1923, 376.

The significance of the deviation of complement in echinococcal cysts of the liver. S KELL. *Arch intern.* 1923, 1923, 376.

Arterial palpation for the differential diagnosis between abscess and tumors of the liver. G I BOV. *Nederl Tijdschr Geneesk.* 1923, 1923, 376.

Large abscess of the liver, the febrile form of these abscesses. V CORRELL and J ALFARO. *Presse med.* 1923, 1923, 376.

Cavernous hemangiomas of the liver. J POLJAK. *Bratskaya lekarska listy.* 1923, 1923, 376.

A stone in the common duct complicated by hydatid cyst of the lower surface of the liver. SA ARAB. *Bull et mem Soc de chir de Par.* 1923, 1923, 376.

The end results of cholecystectomy in carcinoma of the liver. L M TAY and J KOWAN. *Brussels med.* 1923, 1923, 376.

Surgical interference in acute and subacute trophic of the liver. W BRAUN. *Klin Wochenschr.* 9, 2, 1923, 376.

Surgery of the liver and biliary system. H LOUZE. *Wien med Wochenschr.* 9, 2, 1923, 376.

Abscesses of the right hepatic, cystic, and gastric duodenal stoma, and of the bile ducts. E R FLY. *Brit J Surg.* 1923, 1923, 376.

Anatomical relations of the cystic duct of the gall bladder to the hepatic duct. D STREETER. *Surg Clin N Am.* 9, 3, 1923, 376.

The cholesterol content of bile in health and disease. C W McCLELLAN and E MONTAGUT. *Boston M & S J.* 9, 3, 1923, 376.

Surgical anatomy. *Seminat.* 1923, 1923, 376.

Points in the diagnosis of chronic gall bladder disease. C D FORT. *J Iowa Med Soc.* 1923, 1923, 376.

The early recognition of gall bladder disease. J L KROCH. *Virginia M Month.* 1923, 1923, 376.

Rare surgical diseases of the biliary tract. KROCH and WACHSBERG. *Arch f klin Chir.* 19, 3, 1923, 376.

Exploration of the biliary tract with the choledochal tube for the purpose of diagnosis. CORRELL. *Arch intern.* 1923, 1923, 376.

The technique of non-surgical drainage of the gall bladder. G M NILES. *J Med & Georgia*, 1923, 1923, 376.

A study of the bile obtained by non-surgical biliary drainage, with especial reference to its bacteriology. O M LITTON and H L BOGERT. *Am J M Sc.*, 1923, 1923, 376.

Experiments with non-surgical biliary drainage (Michele Lyon test). E HOLLANDER. *Am J M Sc.*, 1923, 1923, 376.

Clinical results following non-surgical drainage of pathologic gall bladders. G M NILES. *J South Carolina M Ass.* 19, 3, 1923, 376.

Remarks on transduodenal drainage of the gall tract. W B MARTIN. *Virginia M Month.*, 1923, 1923, 376.

Acute intestinal perforation. H C MONTAGUT. *Med. Surgeon.* 9, 3, 1923, 376.

Cholecystitis and its complications. M C PRUITT. *Surg. Gynec. & Obst.* 1923, 1923, 376.

A case of gangrenous cholecystitis. J M ANDERSON. *Med J Australia*, 19, 3, 1923, 376.

Primary suppurative cholecystitis due to Eberth's bacillus. ANTONIO. *Arch. intern.* 1923, 1923, 376.

The influence of chronic disease of the gall bladder in producing stomach symptoms. F A C SCHWARTZ. *Canadian M Ass J.* 1923, 1923, 376.

A rare case of intra-abdominal abscess formation after cholecystitis of the gall bladder. SCHWARTZ. *Deutsche med Wochenschr.* 1923, 1923, 376.

Bacterial relationship to stone formation. O C MONTAGUT. *J Iowa State M Soc.* 9, 3, 1923, 376.

Note on case of cholecystitis in which bacillus type was isolated from the center of gall stone. J M PRUITT. *J Roy Army Med Corps, Lond.* 1923, 1923, 376.

Gall stones associated with kidney stones. D W FAY. *Med and G F McKim.* *Cincinnati J M.* 19, 3, 1923, 376.

The direction of the incision in operations on the biliary tract. H BOV. *Zentralbl f Chir.* 1923, 1923, 376.

A lateral bottom-hole incision for drainage particularly with gall stone operations. H HUS. *Munchen med Wochenschr.* 1923, 1923, 376.

Recurrence of gall stones after conservative operation upon the gall bladder performed ten years previously. A GOMER. *Bull et mem Soc de chir de Par.* 1923, 1923, 376.

Operation for biliary fistula. L OY. *Strecke. Zentralbl f Chir.* 1923, 1923, 376.

Papilloma and adenoma of the gall bladder. I ANGEL. *Ann Surg.* 1923, 1923, 376.

Retrograde cholecystectomy. SCHWARTZ, AUSTRIAN and DE MARTIN. *Bull et mem Soc de chir de Par.* 1923, 1923, 376.

Acute pancreatitis in children. report of case with carcinoma of the liver. H B ANDERSON. *J Am M Ass.* 1923, 1923, 376.

Acute hemorrhagic pancreatitis simulating high pyloric obstruction. J F CORVOSE. *Surg Clin N Am.* 1923, 1923, 376.

The pathogenesis of hemorrhagic pancreatitis. F THOCH and L BAKER. *Presse med.* 1923, 1923, 376.

An address on pancreatitis and its association with cholecystitis and gall stones. O BAKER. *Brit M J.* 1923, 1923, 376.

True pancreatic cyst. C A McFILLIEN. *Surg Clin N Am.* 1923, 1923, 376.

- Some cases of tumors and cysts of the pancreas. P. MARONA. Arch ital di chir. 923, 11, 3.
- A histologic study of a case of pancreatic hemorrhage. MORRI. Arch ital di chir. 923, 11, 693.
- On the relation of the spleen to metabolism: review of the literature. J. ROSE. BLOOM. N. York M J & Med Rec. 93, cxxii, 406.
- The relation between the spleen and the sexual glands. FIGUERA. Arch ital di chir. 93, 1, vi, 663.
- The physiopathology of the spleen. A. C. M. MACGILL. J. Lancet. 923, xlii, 8. [142]
- A pseudo-cystic hematoma of the spleen in a surgical patient: splenectomy recovery. H. COE. VITAL. Bull et mémo Soc de chir de Par. 923, xlii, 9.
- Hemoglobinuria in hemolytic jaundice. H. Z. GURRY. Arch Int Med. 93, xiii, 573.
- The change in the blood picture following splenectomy: result of the beginning disturbance of internal secretion. E. L. BENSON. Annals of Surg. 93, 1, 9.
- Recurrence of malaria after splenectomy. I. PERU. Chyl med. 93, 1, 37.
- Traumatic rupture of the spleen. F. TEL and VERNON. Presse méd. 93, xiii, 365.
- Rupture of the spleen. L. R. LINDSAY. Brit M J. 93, 1, 65.
- Psychic disturbance after splenectomy in cases of pernicious anemia. P. NICH. Ann Wchschir. 93, 1, 219. [143]
- Miscellaneous
- Ventral pain sensation. A. FROELICH. Wien med Wchschir. 923, lxxx, 136.
- Vaccinoptosis. R. H. M. HANDELY. Canadian M. Ass. J. 923, xiii, 24.
- The chronic abdomen. R. HUTCHINSON. Brit M J. 93, 1, 667. [143]
- Sympathetic abdominal and genital evanescence: iliac and hypogastric nerves. J. ANGE and C. A. CARTAG. Rev de med y chir de la Habana. 93, xlviii, 9.
- Pneumoperitoneum and peritoneal emphysema. CARRELL. Bull et mémo Soc de chir de Par. 923, xlii.
- Cribra gastral: cords of the abdomen. C. F. VALE. J. Michigan State M. Soc. 93, xiii, 83.
- Gunshot wound of the abdomen. J. F. CONNORS. Surg. Clin. N. Am. 1933, 11, 563.
- Causes of transection of the abdomen. J. LAROCHE. Bull et mémo Soc de chir de Par. 1933, xlii, 33.
- What extent is the course of the wound track of value in the diagnosis of intraperitoneal lesions? BERNARD. Arch f. klin. Chir. 93, cxxii, 78.
- Further observations on the importance of water excretion in the differential diagnosis of surgical abdominal diseases. W. GEDENMAN and G. DRETMAN. Mitt d. Grenzgeb d. Med. Chir. 93, xlvii, 3.
- Further investigations regarding paravertebral abolition of pain in the differential diagnosis of diseases of the gall bladder, stomach, kidney, and appendix, and in the treatment of postoperative lung complications. A. LARSEN. Zentralbl. f. Chir. 93, 1, 46.
- The anatomical basis and sequelae of sphincter spasm in the gastro-intestinal and genito-urinary tract. K. HILLY. Wochschir. und Wchschir. 93, 1, 17, 5.
- The X-ray diagnosis of ectopic ovaries, particularly of the abdomen. E. MORSE. Fortsch. d. Geb. d. Röntgenstrahlen. 923, xxi, 74.
- A retrocaval hydrated cyst operated upon by the cecopyperic approach. J. LOTT. Bull et mémo Soc de chir de Par. 93, 1, xlii, 455.
- Subdiaphragmatic abscess. T. M. BODDIE. J. Am. M. Ass. 923, lxxx, 955. [143]
- The preperitoneal or retroperitoneal root to the subphrenic abscess as the typical operation. K. NATHAN. Arch f. klin. Chir. 93, cxxii, 34. [143]
- Retrocaval suprarenal: become differential diagnosis. MORLEY and RAY. Presse méd. Par. 923, xlii, 337.
- Symptoms and operative treatment of circumscribed retroperitoneal diseases. D. JENI. Arch f. klin. Chir. 93, cxxii, 8.
- Primary retroperitoneal sarcoma: report of twenty-eight cases. C. F. ANDERSON. Surg. Gynec. & Obst. 923, xlii, 280. [143]
- Blocking of the phrenic nerve in injury to the diaphragm. A. BLISS. Zentralbl. f. Chir. 93, 1, 44.
- Eversion of the diaphragm. A. E. JAFFE and J. A. HONIG. Boston M. & S. J. 93, cxxviii, 593.

GYNECOLOGY

Uterus

- The pernicious effects of the use of stems in the uterus and the danger of introducing sounds and other foreign bodies without preparation. J. N. WEST. Am. J. Obst. & Gynec. 923, 135.
- An operation for retrodisplacements of the uterus. J. W. KIRBY. Am. J. Obst. & Gynec. 93, 1, 48.
- Immediate and late results of my method of hysterotomy and of vesico-hysterotomy. PARELLE. Arch ital di chir. 93, 1, vi, 603.
- Prolaps of the uterus. ALVAREZ and DOW. Brit. M. J. 923, 68.
- Double uterus. BOTELLA. Arch de med. chir. y especial. 923, 1, Soc. ginec. espal. 34.
- A cyst of the uterine corpus due to dilatation of the internal portion of the tube. J. S. FAIRBANK. Proc. Roy. Soc. Med. Lond. 93, 1, 11, Sect. Obst. & Gynec. 45.
- Mixed tumors of the uterus. A. J. PETERSEN. J. Lab. & Clin. Med. 923, viii, 169. [143]
- A necrotic fibro-adenoma in a patient aged 74, simulating cancer of the corpus uteri. J. S. FAIRBANK. Proc. Roy. Soc. Med. Lond. 93, 1, 11, Sect. Obst. & Gynec. 43.
- The treatment of fibroma and sarcomatous myomata. E. ROCHAST. Bruxelles-méd. 923, 11, 6.
- Intra-uterine dysmenorrhea. B. BELL. Lancet. 923, cxi, 843.
- The endocrine in uterine hemorrhage. W. LIVER. N. York M. J. & Med. Rec. 923, cxxii, 43.
- Transplantation of the cervix. W. W. BARSTOCK. Am. J. Obst. & Gynec. 93, 1, 280.
- Fundal hysterectomy. H. HARTMAN. Gynec. & Obst. 93, 1, 430.
- Uterine cervical polyps. A. E. CHURCHILL. Practitioner. 923, 1, 310.
- Chronic endocervicitis. M. W. FLETCHER. Nebraska State M. J. 93, 1, vii, 3. [144]
- Epithelioma of the uterine cervix. J. POTIERA. Bull. et mémo Soc. de chir. de Par. 93, 1, xlii, 34.
- Salient points in the diagnosis and treatment of cancer of the uterus. A. H. COHEN. Illinois M. J. 1933, 1, 23.
- Is cancer of the cervix rare with uterine prolapse of second and third degrees. O. G. CHANANAR. Bull. et mémo Soc. de chir. de Par. 923, xlii, 85.
- Carcinoma of the cervical stump: report of eight cases. L. DAVIS. Boston M. & S. J. 1933, cxxviii, 304. [144]

- T cases of cancer of the cervix treated by radium before operation T W LUNA and A GONZALEZ. *Proc Roy Soc Med Lond* 93, xvi, Sect Obst & Gynec. [146]
- The radical operation of Latko Schottmann for uterine cancer O JIMENEZ. *Rev argent de obst y gynec* 923, vii, 3.
- Sarcoma of the uterus J C MASON. *Am J Obst & Gynec* 93, 345.
- Sarcoma of the uterus P J RICE and P H CHARLTON. *Ann Surg* 93, lxxvii, 470. [147]
- A plea for more frequent resort to hysterectomy in the treatment of chronic pelvic disease J PHILLIPS. *Practitioner*, 93, cx, 507.

Adrenal and Peri-Uterine Conditions

- Modification of the Rubin technique for the transuterine insertion of the fallopian tubes A JACOBY. *Surg Gynec & Obst*, 93, xxxv, 57.
- The diagnostic value of artificial pneumoperitoneum in sterility in women B FRIEDLANDER. *J Michigan State M Soc* 93, xxi, 95.
- The patency of the fallopian tubes ascertained by transuterine injection of fluids I S STONE. *Am J Obst & Gynec* 1923, v, 408.
- Operations on the round ligaments H FERGUSON. *Brit M J* 923, i, 63.
- Contribution to the study of the blood formula in ovarian insufficiency Irgotismo. *Siglo med* 923, lxx, 4.
- Ovarianophth metrorrhagia VITAL ALA. *Prog de la clin Madrid*, 93, xiv, 470.
- Cyst of the ovary weighing 55 lbs. L N ALVARO. *Report de med y cirug* 923, xiv, 83.
- An unusual ovarian cyst FALCONE. *Arch ital di chir* 93, vi, 66.
- Unusual contents of ovarian cysts—report of two cases W BOLT. *Canadian M Am J* 93, xii, 50.
- Three cases of bilateral tumors of the ovary F W B. SCHOTT. *Surg Clin N Am* 923, iii, 570.
- A case of tumor of an ovarian cyst in an infant E M POWELL. *Lancet*, 923, cccv, 751.
- Classification of peritumors of the ovary C CATALANO. *Gac med Perinat*, 923, i, 27.
- Two cases of ovariectomy in women over 70 years of age H R SANDOZ. *Brit M J* 923, xli, [147]
- Double salpingo-oophorectomy with partial auto-ovarian transplantation followed by two years of menstruation,

normal pregnancy, and an uncomplicated menopause at 51 years of age W S BURROWS. *Am J Obst & Gynec* 923, 379.

External Genitalia

- Cysts of the labia minora H NEWTON and P H ST. GYNCE. *et obst* 923, vii, 26. [147]
- Common vaginal discharges encountered in practice J E KIRBY. *N York State J M* 1923, xxxi, 37.
- Adenomatous vaginitis B WATSON. *Proc Roy Soc Med, Lond* 923, xvi, Sect Obst & Gynec., 46.

Miscellaneous

- Endometriosis in gynecology J T SCHILL. *N York M J & Med Rec* 1923, cxvii, 404.
- Sudden acute pain in the abdomen associated with acute pelvic pain in women I C RUSBY. *J Am M Ass* 1923, lxxv, 50.
- Inflammations of the female pelvis N F LAVER. *Habermann Month* 93, lxxv, 34.
- Gonorrhea in women O K HERRICK. *California State J M* 923, xxi, 3.
- The treatment of gonorrhea in women J A McGARRY. *Therap Gaz* 1923, 94, xxxix, 220.
- Gynecological and obstetrical tuberculosis V A FORT. *Am J Surg* 923, xxxvi, 83.
- The treatment of peritoneal and genital (tuberculosis in the female with the roentgen ray W WATSON. *Wien klin Wochenschr* 93, xxxv, 923. [148]
- The Factoran reaction in gynecology G CASAL. *Siglo med* 1923, lxx.
- Results of radium in gynecology V F BLAVELL. *California State J M* 93, xxi, 55.
- Special features of radium therapy in gynecology A H CURTIS. *Wisconsin M J* 923, xxi, 408.
- A new technique for gynecological operations T RENO. *Rev med d Rosario*, 923, xii, 90.
- A plastic operation for the cure of urinary incontinence in women L LARSEN. *Arch ital di chir* 93, vi, 66.
- The healing of the wounds of gynecological operations following previous roentgen treatment E VOOT. *Med Klin* 93, xvii, 140. [148]
- The management of the female urinary bladder after operation and during pregnancy further study of roentgen rays in its bearing on urinary tract disturbances A H C. KIRBY. *J Am M Ass* 923, lxxv, 26.

OBSTETRICS

Pregnancy and Its Complications

- Sedimentation of the red blood corpuscles and gestation H VORTEX and P HENRIET. *Rev franç de gynéc et d'obst* 923, xvi, 42. [149]
- The glycosuria test for pregnancy P F WILLIAMS. *Am J Obst & Gynec* 923, lxxv, 160. [149]
- Some points in the management of pregnancy and labor A J ROYCE. *Am Med* 923, xxx, 3.
- Problems of pregnancy and the puerperal state H W. WOODSTOCK. *California State J M* 1923, xxi, 70. [149]
- Flat pelvis in diabetic T BLASCO. *Arch de med cirug y espec*, 1923, x, cx. Soc gynec equib. 24.
- The value of abdominal measurements in recognizing the size and maturity of the fetus C R HAYWARD. *Texas Stat J M*, 923, xvi, 543. [149]
- A case of pregnancy after extirpation of the fallopian tube on one side and the ovary of the other side C

- DEJANIER. *Bull et mèm Soc de chir de Par* 923, xlv, 47.
- Internal pregnancy T C GILBERT. *Texas State J M* 1923, xxi, 516. [150]
- A case of full term intraperitoneal pregnancy following tubal abortion E J JOYCE. *N Practitioner* 1923, cx, 328.
- Subcutaneous implantation of the human ovum G L. STRICKER. *J Am M Ass* 923, lxxv, 430. [150]
- Pregnancy and breast disease D G CAMPBELL. *Canada M Am J* 923, xxi, 244.
- The effect of pregnancy on tuberculosis B S POLLAK. *J Med Soc N Jersey* 923, xxi, 54.
- The complication of puerperia with gestation G C. MONROE. *Surg Gynec & Obst* 923, xxxvi, 507.
- The serum diagnosis of syphilis in the pregnant or puerperant woman P LAURET and H VERGELY. *Gynec et obst* 923, vii, 30. [150]

Studies on the influence of pregnancy in syphilis the course of syphilitic infection in pregnant women J L MOORE. *Bell Johns Hopkins Hosp Balt* 9 3 xxix 40 [152]

Ovarian cysts and pregnancy the results in thirty five cases operated upon during pregnancy J STRANOVSKY. *Gynec et obst* 9 vi 405 [152]

Laparotomy for pelvic hydrated cysts in cases three months pregnant V BLASCO. *Arch de med chir* 3 especial, 923, x, 22. *Am Soc gynec espec* 6

Misc during pregnancy II A DRECHT. *Zentralbl f Gynaek* 922, xvi, 205 [152]

Tournaism of pregnancy from new spect O M GRUBER. *Am J Obst & Gynec* 9 3, 400

An improved phenothetrachlorophthalen test for liver function in pregnancy and its tournaism H H ROSENFIELD. *ad E F SCHNEIDER. J Am M Ass* 9 3 lxxx [152]

The fundus oculi in the tournaism of pregnancy J I BYRNE. *N York Stat J M* 9 3 xxiii, 40

Hypertension gra stadium N WILSON. *Brit M J* 921, i, 502

Phenol barbitol sodium (barbital sodium) treatment for hypertension gravidarum R LUTHER. *Am J Obst & Gynec* 923, xvi 470 [152]

Eclampsia S C RYCELLS. *J Am Inst Homoeop* 9 3, xv 202 [152]

A new method for the prophylactic treatment of eclampsia STROGANOFF. *J Obst & Gynec Brit Emp* 9 3 lxxx

The psychoplasia of pregnancy P COCHRAN. *Med Press* 9 3, cv 320

Nephrotoxicosis as complication of pregnancy A P HEDRICK. *Med Herald* 9 3 xlii, 4

Pregnancy in case of neoplasia for bacillus M F VIZARD and F QUERREAU. *Presse med Par* 9 3 xxii, 146 [154]

The pathogenesis and treatment of poplexy of the placenta L PONTIS. *Gynec obstet* 9 3 vii, 56 [154]

A case of placenta previa MARCHESINI. *Arch de med chir y espec* 9 3. *Am Soc gynec espec* 28

A consideration of the causes of stillbirths and neonatal deaths II BAILEY. *Arch Pediat* 923, xl 20

Labor and Its Complications

The twilight sleep of scopolamine and physiological labor J A BURLIN. *Rev argent de obst y gynec* 9 3, 3

A safe and practical method of administering scopolamine anesthesia in obstetrics B VAN HOOZEN. *N Orleans M J* 8 5 923 lxxx 33 [154]

Dystocia due to an ovarian cyst BOTELLA. *Arch de med chir y espec* 923. *Am Soc gynec espec* 46

The use of the Champetier de Ribes bag J B GONZALES. *Rev argent de obst y gynec* 923, vi, 9

Occiput posterior A M MURPHY. *J Indiana State M Ass* 9 3 xvi, 1

A procedure to facilitate cesarean by internal version in cases of transverse presentation with the escape of amniotic fluid L DIAS. *Rev med d Rosario* 923, xiii, 83

The management of the third stage of labor C A GORDON. *Am J Obst & Gynec* 923, 403 [155]

The La Torre method of effecting hemostasis POLA. *Arch Obstet* 9 3, xxi, 37

Craniotomy A M MURPHY. *Am J Obst & Gynec* 9 3, 37

Transperitoneal cesarean section of the lower uterine segment in fifty cases P GASPARI. *Rev franc de gynec et d'obst* 923, xvii, 13 [153]

Cesarean section under local anesthesia W E MOW. *Med Herald* 923, xlii, [156]

Complications of labor cause of intracranial hemorrhage O I COVICH. *Arch Pediat* 923, xl, 39

Puerperium and Its Complications

Concerning milk cysts galactocoele A SAKETARY. *Moscow M J* 9 3, 34 [156]

The postoperative function of the liver in the normal and pathological puerperium M L PEREZ. *Rev argent de obst y gynec* 923, 37

Internal cervical repair following confinement T COFFEY. *California Stat J M* 9 3, vii, 53

Suppression of urine after labor A W OWEN. *Brit M J* 9 3, i, 630

Acute puerperal infection of the uterus C S L ROBERTS. *Brit M J* 9 3, i, 557 [156]

Intervention of the uterus occurring in the third week of the puerperium W R WHITE COOPER and H K GRUBER. *Proc Roy Soc Med Lond* 923, xvi Sect Obst & Gynec 45

Necklaid ileus during the puerperium W MOELLER. *Monatsh f Geburtsh Gynaekol* 9 3, lxx, 73

Puerperal infection C ACHARD. *Med Press* 9 3, cv 207

More about the prevention of puerperal fever and something about its successful treatment S HANSEN. *Am Med* 923, xxi, 7

The use of continuous drip irrigation in puerperal fever A WAGNER. *Deutsche Wochenschr* 9 3, xliiii, 577

Serotherapy and chemotherapy in puerperal infection F B KAY. *Med Klin* 923, xii

The uterine erodid in puerperal endometritis L G GRAY. *Siglo med* 9 3, lxx, 8

Treatment of puerperal endometritis L G GRAY. *Siglo med* 9 3, lxx, 30

Newborn

A practical infant incubator F W GRAYVILLE. *Arch Pediat* 923, xl, 246

An unusual fetal monstrosity M H CLARA. *Wisconsin M J* 923, xxi, 500

T fetu parvulus 11th third living child C C WALLIN. *Northwest Med* 923, xxi, 40

Recognition of pyramidal infants new use for the Polster bag II FRASER. *N ribwest Med* 9 3, xxi, 30

The entry of the nursing A HYM. VAN and H DAVIDSON. *Am J Dis Child* 923, xxi, 30

Intuition of the newborn from the obstetrician standpoint H C WILLIAMSON. *Arch Pediat* 9 3, xl, 13

Convulsions of the newborn J ORRICO. *Semin med* 923, xxi, 624

T talus neonatorum P L PARKER. *Arch Pediat* 9 3, xl, 26

A case of permanent jaundice in an infant B MYERS. *Lancet* 9 3, cv 844

A statistical analysis of the causes of palpable lymph glands in the newborn L DUN and H L DUN. *Am J Dis Child* 9 3, xxi, 39

Hemorrhage in the newborn L E LAAYENWORTH. *Ohio State M J* 923, xxi, 205

Bleeding and coagulation in the first week of life D H SERRA. *ad H R LORENZO. N York State J M* 9 3, xxi, 146

The diagnosis of congenital lues in the newborn and in nursing babies A B ALAPAY. *Presse med Par* 1923, xxi, 373

Postmortem findings in the newborn H C McDowell.
N. York State J M 923, xxiii, 143

Miscellaneous

The technique and organization of the Los Angeles
maternity service L G McNair California State J
M 923, xxi, 58

Obstetrical-gynecological diagnosis A P Linnert.
Am J Obst & Gynec 923, 43
The new maternity preventive and reparative obstetrics J W BALLANTYNE Brit M J 923, 1, 617
Relation of immediate secondary operation to obstetrics J L BURNES Ohio State M J 1933, xii, 590
Maternal mortality W B HERNIM Canadian M J 1933, xxi, 5

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

A contribution to the study of hypernephroma F
SERRAVALLE Policlinico Rome, 1933, xxx, ser prat 307 [154]
Hypernephroma after an accident RUCKENSTEIN Dent
sch med Wehrsch 923, xix, 584
A case of acute bilateral suprarenal hemorrhage
A G M STIVERS Lancet, 923, civ 646
Extraperitoneal-extraperitoneal approach to the adrenal
through the diaphragm A MIZUKAWA Zentralbl f
Chir 1933, 1, 136
A right pararenal tumor section of the vena cava and
circular suture, postoperative adrenal recovery ROSENBERG
Bull et mèm Soc de chir de Par 923, xix, 50
Double kidney D N EMMERTH Ann Surg 1933
lxviii, 450
An interesting case of renal-vascular anomaly ROMANI
Arch ital di chir 1933, vi, 71
Remarks on 300 cases of nephropathies F G ROSS
Rev de med y chir de la Habana, 1933, xxviii, [158]
Roentgenographic methods for the recognition of plasm
of the kidney-pneumonephrotomy M L NIKOLSKY
Wendel Roentgenol Radiol 923, 1, 377 [158]
Urinary secretion constants in surgical practice MO-
LAVINO Arch ital di chir 923, vi, 70
The value of the phenolamphosphthalen test of renal
function TAMBO Arch ital di chir 923, vi, 73
Suggestion for a standard technique in the application of
the phenolamphosphthalen test as the determination of
the relative functional capacity of the two kidneys H M
YOUNG J Missouri State M Ass 1933, xxi, 17 [158]
Anatomical changes in the kidney with reference to the
results of functional examination TAMBO Arch ital di
chir 923, vi, 733
Demonstration of renal function with phenolamphosph
thalen MIZUKAWA Arch ital di chir 923, vi, 744
The relation of the phenolamphosphthalen reaction
and Ambard's coefficient to the change in chloride secre-
tion NITANO Arch ital di chir 923, vi, 744
The determination of phenolamphosphthalen excre-
tion in the presence of bicarbonates J Am M Ass 923,
lxviii, 1376
Comparative studies of the histologic lesions of the kid-
ney and of its functional examination F RATTENBY
Arch d med d reins et d organes génitourinaires,
1933, 1, 37
Glycosemia and glycemia S E BERNARD Scand
med 923, xxx, 754
The quantity of acid acid excreted in the urine M
RATONNE J de méd de Bordeaux, 1933, lxxv, 3
Hypoplasia of the kidneys and atrophy of the ureters
H. DIECKMANN Arch f path Anat Physiol 1933, 193,
cxviii, 401
Renal counterbalance experimental and clinical
study with reference to the significance of chronic trophy
T HORMAN J Urol 923, xi, 239 [153]
Reflex anuria J F McCAULEY, J A KELLY and
A F CRACE J Am M Ass 923, lxviii, 1043

The technique of perirenal insufflation M CHRYSTAL
Bull et mèm Soc de chir de Par 923, xix, 80
Remarks on pyelography at a lantern demonstration
before the Congress of Radiology and Physiotherapy J
THOMAS-WALKER Arch Radiol & Electrotherapy 923,
xxiv, 134
Congenital left hydronephrosis recognized in the course
of gastro-intestinal infection in child of 9 years primary
nephroses secondary nephroses J L ROSSIER
and R DARRIGT Presse méd Par 923, xxx, 377
A large congenital hydronephrosis ROYANICH Arch
ital di chir 923, vi, 741
A large hydronephrosis from kinking of the ureter over an
abnormal blood vessel in child of 3 years, transper-
itoneal nephrectomy by the anterior route A CHALIK
Bull et mèm Soc de chir de Par 1933, xix, 596
Hydronephrosis due to abnormal blood vessels MAROT
and BART Bull et mèm Soc de chir de Par 923, xix,
574
Hydronephrosis from angulation of the ureter over an
abnormal blood vessel P BART Bull et mèm Soc de
chir de Par 923, xix, 586
Spontaneous rupture of hydronephrosis W Q WOOD
Brit J Surg 923, x, 574
The major syndromes of renal pathology M LARSEN
Arch de med chir y general 923, xi 143
On the passage of the staphylococcus aureus through the
kidney of the rabbit S C DYER J Path & Bacteriol
923, xxvi, 104
Congenital infection of the kidney with spontaneous
recovery R L DOTHENMARKIN and H CONLEY J Am
M Ass 923, lxviii, 1057
Tuberculosis in kidneys with two poles and its surgery.
E FERNANZ Acta chirurg Scand 923, lv, 58
A very early case of renal tuberculosis L H MEDANO
and W THUNDERBOLT Wisconsin M J 1933, lvi, 597
Renal tuberculosis diagnosis and treatment H D
FURNESS Am J Obst & Gynec 923, 366
Renal tuberculosis, renal colic in the remaining kidney
recovery CHASTANO Arch ital di chir 923, vi, 719
Pyelitis O S GORNOV Canadian M Ass J 923
xxvi, 35
Pyelitis in infants and children J A RAWLINSON and
H L LITTON Texas State J M 923, xxviii, 600
Lavage of the kidney pelvis E PARRY Arch d med d
reins et d organes génitourinaires, 923, 1, 360 [159]
Gross renal haematuria due to blood vessel changes in
the papilla with the report of an unusual case requiring
nephrectomy G MacDON J Urol 923, 5, 137
A consideration of diseases of the upper urinary tract
A M CRANCK Am J Surg 923, x, xxviii, 8
Traumatic haemorrhagic nephritis C J McCAULEY, Jr.
Surg Clin N Am 1933, vi, 280
The surgical treatment of nephritis A P MANN
Sglo med 1933, 1, 103, 26
Abscess of the kidney recognized by the aid of the X ray
V RIVIERE Roentgenologia, 923, 1, 5
Pyelonephrosis I SHERMAN J Urol 923, ix, 367

Heminephrectomy for prosoephorosis of horseshoe kidney. W. CARR. *Zentralbl f Chir* 923, 1, 366

The diagnosis and management of calculi in the upper urinary tract. N. S. MOON. *J Missouri State M Ass* 93, 3, 31, 3

The exact localization of renal calculi by radiography of the profile in the course of perirenal insufflation. BARRY and LAZARUS. *Bull et mém Soc de chir de Par* 1923, xix, 405

The diagnosis and treatment of renal calculi. S. PASQUAL. *Med Libera*, 93, vi, 6

Bone suppuration the basic cause of renal calculi in twenty cases following war wounds. H. E. P. UL. *J Urol* 923, ix, 345

A case of lithiasis of both kidneys and the right writer right nephrolithotomy and ureterolithotomy left pyelolithotomy recovery. F. ROSS. *Arch ital di chir* 923, vi, 780, 781, 804

Giant calculus of the kidney. ROLANDO. *Arch ital di chir* 923, vi, 710

Grave hematuria secondary to pyelotomy for stones in the pelvis, secondary nephrectomy. GEA. VITTASO. *Arch ital di chir* 923, vi, 699

Free transplant of mesoec in nephrotomy wounds. CHINAZA. *Arch ital di chir* 923, vi, 66

Contribution to surgery of both kidneys. BORRERI. *Arch ital di chir* 923, vi, 780

Nephrectomy with the removal of segment of the vena cava receiving the renal veins. P. DUBLET. *Bull et mém Soc de chir de Par* 93, xix, 300

Aseptic wounds of the kidney. MINAZZI and GONZALEZ. *Rev méd d Romano*, 1923, xii, 80

Report of an unusual case of ureteral anomaly. C. H. W. JR. *J Med Ass Georgia*, 93, xii, 53

Megalo-ureter: the importance of the ureterovesical valve. J. R. CABLE. *J Urol* 923, ix, 315 [189]

Structure of the ureter. A. I. DONOVAN. *Virginia M Month* 923, 1, 8

Calculi in the pelvic portion of the ureter. FERRER. *Arch ital di chir* 923, vi, 786

Intravascular cyst dilatation of the inferior portion of the ureter treated by diathermy. D. ASA. *Arch ital di chir* 1923, vi, 780

The diagnosis and treatment of ureteral calculi. G. T. THOMAS. *Missouri Med* 93, vi, 36

Total nephro-ureterectomy secondary to paravascular balance of the ureter with prosoephorosis. TARDI. *Arch ital di chir* 93, vi, 79

Bladder, Urethra, and Penis

A modified lens for cystoscopy. BRUNT. *Arch ital di chir* 923, vi, 75

The value of the cystoscope in the diagnosis of diseases in the upper urinary tract. C. G. HORTON. *Kentucky M J* 93, xii, 66

Radiographs of the surface and profile of the bladder. P. DUVAL and H. BICHLER. *Bull et mém Soc de chir de Par* 93, xix, 338

Constriction of the neck of the bladder. PRONOSO. *Rev méd d Sevilla*, 923, xix, 25

Spontaneous rupture of the bladder in encephalitis lethargica: suture recovery. PERRAUD. *Arch ital di chir* 923, vi, 727

Traumatic rupture of the bladder: complete necrosis and excision of the internal all spontaneous restoration. C. MARINO. *Arch ital di chir* 923, 1, 766

Fracture of the pelvis and rupture of the bladder recovery. T. H. HANCOCK. *Internat J Surg* 93, xixvi, 46

An unusual case of multiple diverticula of the bladder. MAMERTI. *Arch ital di chir* 1923, vi, 75

A case of an osseous fragment in the bladder. J. ESCOBAR. *Prog de la clin Madrid*, 93, xiv, 307

A curious case of foreign body in the bladder. GARDONI. *Arch ital di chir* 923, vi, 786

Vesical lacer. PIERRELOTTI. *Arch ital di chir* 923, vi, 737

Fleeting ulcer of the urinary bladder. J. E. CASSELLER. *Repert de med y chir* 923, xiv, 37

Tumors of the bladder. E. BRICK. *Surg Clin N Am* 93, iii, 433

Treatment of vesical tumors with the high frequency current. PELLICORNA. *Arch ital di chir* 93, vi, 77

A case of adenoma and vesical varix. CARRARO. *Arch ital di chir* 923, vi, 786

Agenesis of the urinary bladder. F. KROD and H. M. TOWNSEND. *Surg Gynec & Obst* 923, xxxvi, 467 [189]

A case of total gangrene of the vesical mucosa. VOLANTE. *Arch ital di chir* 923, vi, 75

An unusual lesion of the urinary bladder. P. PARA. *Polidm Rome*, 93, xix, sec part 496

The treatment of carcinoma of the bladder. W. NEILL, JR. *South M J* 923, xvi, 39

The disposition of the ureters in certain abnormal conditions of the urinary bladder. W. E. LOWER. *J Am M Ass*, 93, lxxx, 300 [189]

Bladder surgery in relation to the fourth era of surgery. R. T. MARSH. *Am J Obst & Gynec*, 93, 39

Pen urethral denoma. LILLA. *Arch ital di chir* 93, vi, 77

Symptoms and treatment of urethral transpositions. C. ROUNDO. *Chin y lab* 93, 1, 25

Chronic urethritis in women. C. R. CORTI and G. G. SMITH. *Boston M & S J* 93, cxxxviii, 596 [166]

Diagnostic errors in posterior urethritis and prostaticitis. C. QUARTERMAN. *J Med Ass Georgia*, 93, xii, 240

A deep urethral synyng: simple and exceptional adaptation of the bulb type. H. J. SCHWACH and W. E. JOSE. *J Am M Ass* 93, lxxx, 669

Primary syphiloma of the urethra. LILLA. *Arch ital di chir* 923, vi, 727

Primary carcinoma of the urethra. H. CUL. TER and N. K. FORSTER. *Surg, Gynec & Obst* xxxvi, 473

Anesthesia of the urethra and bladder with cocaine. P. OVER. *Arch ital di chir* 93, vi, 75

Essential penopneum. ALONSO. *Arch ital di chir* 93, vi, 728

Pseudobemphrodism or complete hypospadias. F. R. HAGGERTY and H. B. KNEALE. *Surg Gynec & Obst* 923, xxxvi, 495

Genital Organs

Chronic incomplete retention of urine from an accessory prostatic gland. CARRARO. *Arch ital di chir* 923, vi, 786

Prostatic obstruction. A. R. STEVENS. *Surg Clin N Am* 93, iii, 519

Prostatic obstructions. H. W. HOWARD. *Northwest Med* 93, xiii, 39

The treatment of prostatic hypertrophy with the high-frequency current. DICKROCK and LARA. *Brazillias med* 923, xi, 680

An instrument for incision of the vesical mucosa in suprapubic prostatectomy. MARTINI. *Arch ital di chir* 923, vi, 718

A device for hemostasis and drainage following suprapubic prostatectomy. J. H. CONYNGHAM. *Surg Gynec & Obst* 93, xxxvi, 569

- Complications and mortality curves following prostatectomy W G SCHULTZ Northwest Med 93, xxx, 31
- A rare complication in the postoperative course of prostatectomy by Freyer's method RUTZ Arch ital di chir 93, vi, 75
- Late results of prostatectomy GAMMEL Arch ital di chir 93, vi, 715
- Cancer of the prostate G G SMITH Boston M & S J 93, cliviii, 6
- Carcinoma of the prostate cured by radium G NICOLOTTI Policlin Rome 19, 3, xxx, sec. prat 494
- A type of febrile orchitis in infancy due to torsion of the hydatid of Morgagni A MOOREHEAD Bull etnol Soc de chir de Par 93, xix, 350
- Chronic, non-specific epididymitis and orchitis CHAZZ Arch ital di chir 93, vi, 66
- Non specific orchitis and epididymitis G. CAPOCCHI Arch ital di chir 93, vi, 145
- Torsion of the testis H WERT Deutsche med Wchnschr 93, xix, 354
- Functional changes following Ombredanne's operation for cryptorchidism in an adult DELAVO Arch ital di chir 19, 3, vi, 77
- Ectopic testis CACCA Arch ital di chir 93, vi, 66
- Torsion of an ectopic testis in child 4 years of age BOLL etnol Soc de chir de Par 93, xix, 30
- Free transplantation of testis H BUCHENAUER and F C. HILGENDORF Deutsche Ztschr f Chir 93, cliviii, 43
- Puncture of the tunica in the orchid and pathologico-anatomical control of the result E MITTMEYER Klin Wchnschr 93, 4, 37
- Cancer of the testis GA. BOVVER Bull etnol Soc de chir de Par 19, 3, xix, 73
- Surgery of the seminal vesicles E G MARK J Okla home State M Ass 9, 3, xvi, 95
- Anatomical of the vas deferens V. SAL. Policlin Rome 93, xix, sec. prat 5
- Genital tuberculosis in males and the result of treatment, particularly the result of epididymectomy F REPOARD Arch f klin Chir 93, clviii, 758

Miscellaneous

- Observations with comments on study of the urinary tract of eighty fetuses and young infants G V A BROW and C CORNELL Am J Obst & Gynec 93, 38, 146
- Urological diagnoses from the standpoint of the general practitioner L T PRICE Virginia M Month 19, 1, 30
- Cases of error in the roentgenological diagnoses of calcinosis of the urinary tract. P DORCINO Policlin Rome 93, xix, sec. prat 69
- Coarctation and its complications in the male treated ligation of the urethra as diagnostic and N E ALCO-STRAW Internat J Surg 93, xxxvi, 57
- Keratoderma blennorrhagica H L KARTWIGER J Am M Ass 93, lxxx, 993
- Rare localization of simple chancre J MIA Rev med d Uruguay 9, 3, xxi, 9
- The local Wassermann reaction new diagnostic and in primary syphilis D STERN and H REINER Minnesota Med 93, vi, 67
- The intravenous injection of urotropin in inflammatory processes of the urinary tract ROWLAND and BOSCH Arch ital di chir 93, vi, 7
- Hematuria—a urological danger signal E O SWARTZ Connecticut J M 93, vi, 83
- Associated hemoptysis and hematuria A CHART J de med de Bordeaux, 93, xcv, 38
- Defective duct as cause of sterility Social report of fertility studies in the albino rat D MACDONALD J Am M Ass 93, lxxx, 978
- The treatment of sterility by means of dacthermy C A CASTELLO and J F M GONZALEZ SCIENCE med 93, xxi, 377
- Sperm culture G BARNETT Brussels med 19, 3, 67
- Pre-cancerous and early cancerous lesions of the prostatic tract J R DILLON California State J M 1913, xii, 148

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

- Conditions of the Bones, Joints, Muscles, Tendons, Etc.
- Functional exostosis CUNEO Arch ital di chir 93, vi, 709
- Changes in the skeleton as the cause of calcification F SCHULTZ Mitt d Grenzgeb d Med Chir 93, xxxvi, 243
- Fracture formation in the bones and slow fractures in so called hamper disease of the bones SANDROTT Arch f klin Chir 93, clviii, 586
- Spontaneous rickets in rat V KOEHLER J Path & Bacteriol 93, xxi, 27
- The influence of the removal of the sexual glands on the skeleton and on animals kept on normal or rickets producing diets V KOEHLER J Path & Bacteriol 93, xxi, 207
- On the diagnostic and therapeutic importance of some typical tender bone points R BURMANELL N York M J & Med Rec 1913, clviii, 35
- The morphology of the blood in peritonocoeles infection of bones and joints A A KOWLOVSKY Verhandl d Russ Chir Prolong Ges, Petrograd, 9
- Tubercle and tuberculosis of bones and joints F ZOLLINGER Scherr med Wchnschr 93, la, 105, 1, 24, 34

- An unusual form of multiple tuberculosis of the meta physes in child H BRUNCKAUER Ietscher d Geb d Roentgenstrahlen, 9, 3, xxx, 995
- Hemibothry, an infectious disease of the bone and joints E S CHART Minnesota Med 9, 3, 1, 263
- The diagnosis of syphilis of the diaphyses of the long bones C DUNN and G MIRONOVICH Arch franco-belge de chir 9, 3, xxi, 14
- A case of bilateral infantile osteo-arthritis deformans. DONN Arch ital di chir 93, 4, 71
- Koehler's disease H LACROIX Hygiee, Stockholm, 9, 3, lxxxv, 300
- The etiology of Koehler disease DUPON Vmchen med Wchnschr 93, lxx, 30
- The symptoms of acute osteomyelitis D F ROBERTSON Canadian M Ass J 9, 3, xii, 363
- Ostitis serosa R L KALVOSE Brit J Surg 1913, 1, 487
- Bone tumors sarcoma, periosteal group Osteolytic type—beginning usually periarthritis and aneurysm J C BLOOMCOCK J Radiol 23, 9
- Joint mice A HARTMAN Arch f klin Chir 1913, clviii, 733
- Regarding the spontaneous development of joint mice E ROSENBERG Vmchen med Wchnschr 19, 3, lxx, 757

- The joint capsule and joint mice in case of adhesive arthritis deformans. F. KROHN Arch f orthop Unfall-Chir 9, xxi, 367.
- A investigation regarding the action of phenol-camphor on the joints. A. HANSEN Arch f klin Chir 9, cxxii, 35.
- The action of phenol-camphor on the joint cartilages. G. AUMANN Zentralbl f Chir 9, 3, 434.
- The anatomical structure of searthritis. T. KALIMA Acta anat, 9, 2, 38.
- Notes on the arthritides. S. J. MINNICK Kentucky M J 9, 3, xxi, 90.
- Atrophic arthritis. L. T. S. ANN Rhode Island M J 9, 3, vi, 5.
- Suppurative arthritis cured by Willem's treatment. NYER Bull et mèm Soc de chir de Par 9, 3, xlii, 58.
- Suppurative arthritis and osteomyelitis. H. ALCOCK Ann Surg 9, 3, lxxiv, 497.
- The treatment of ankylosis of gonarthrosis origin by auto-gonococcus serum. F. PARRIO Med Ibera, 9, 3, vi, 303.
- Anatomical and histogenetic studies of the interosseous membrane. H. BOEKER Arch f klin Chir 9, 3, cxxii, 796.
- A clinical study of thirty cases of muscular dystrophy. R. V. LUTHER J Bone & Joint Surg 9, 3, 466.
- Myositis ossificans and Volkmann paralysis. W. R. BARNUM Brit J Surg 9, 3, 475.
- Low cases of traumatic myositis ossificans. P. BULL Norsk Mag f Lægevidensk 9, lxxviii, 99.
- A contribution on so called myositis ossificans progressiva. W. LORKE Deutsche Zeitsch f Chir 9, cxcv, 38.
- Tumors of the tendons and tendon sheaths. S. J. D. BRYSON Brit J Surg 9, 3, 460.
- Current-cell tumors of tendons associated with xanthelasma. R. OLLIVIERO Brit J Surg 9, 3, 466.
- The high scapula. E. THOY Grigoriad, 9, 2, p. 59.
- Subscapular crepitation in congenital deformities of the upper ends of the scapula. G. JEAN J de méd de Bordeaux, 3, cxcv, 273.
- Paralitic shoulder. A. E. W. COO Minnesota Med 9, 3, 1, 245.
- Osteoarthritis of the humerus. intercapitulum humeri disarticulation recurrence in the thoracic glands and pleura of the same side after more than eight years. G. D. ALL Bull et mèm Soc de chir de Par 9, 3, xlii, 506.
- Case of traumatic cubitus varus. A. COV. BOYER Rev d'orthop 9, 3, xxx, 6.
- Typical osteitis of the radius. A. MARTIN Bull et mèm Soc de chir de Par 9, 3, xli, 479.
- Congenital medio-clavicular ankylosis. S. VETUSO Bent klin Chir 9, cxxvii, 6.
- Toxicosis paralysis of the intrinsic muscles of the hand and its relief. B. BROOKMAN Surg Clin N Am 9, 3, vi, 465.
- Serum-endoarthrosis of the flexor tendon sheaths of the wrapping fingers. G. HALL Arch f klin Chir 9, 3, cxxii, 33.
- Practical importance of limes therapy in ankylosis of the fingers. A. WERT Arch ital di chir 9, 3, 71.
- Cartilage processes in the costal cartilages and their operative treatment. W. F. J. SURVEYAL Woono Arch f klin Chir 9, 3, cxxii, 345.
- Chondritis and perichondritis of the ribs as complication of typhus. M. V. K. 4077 Slovensk Med J 9, 1, 97.
- Primary infectious osteomyelitis of the ribs. F. MICHELSON Arch f klin Chir 9, 3, cxxii, 34.
- Acute infectious spondylitis and diseases of the spinal cord. E. FRANKENF. Fortschr d Geb d Roentgenstrahlen, 9, 3, xxx, 3.
- Congenital deformity of the spine and ribs. LA FENLA Arch ital di chir 9, 3, vi, 7.
- A case of spine bacilla occulta treated surgically. T. H. ELLER Nederl Tijdschr v Geneesk 9, 3, lxx, 5.
- The development of the upper vertebrae and occipitalization of the ribs. M. LERO Chir d organ di movimento, 9, 2, vi, 65.
- Three cases of sacralization of the fifth sacral vertebra. D. VETUSO Chirul med 9, 3, lxx, 40.
- Typical spondylitis. F. BURRARA Arch de med chir y special 9, 3, x, 97.
- Spondylitis in children. I. LEONTEVA Verhandl d. Russ. Chir. Pirogovsk Ges. Petrograd, 9, 3, 164.
- Traumatic spondylitis. S. M. DUCHOWSKI Nowy Chir Arch 9, 3, vi, 375.
- A case of spondylitis rhomboid. J. COLLIER Proc Roy Soc Med Lond 9, 3, xvi, Sect Neurol 47.
- Some new ideas with regard to congenital scoliosis. A. MOCHEUX et C. ROZIERE Rev d'orthop 9, 3, xxx, 9.
- Can fixed scoliosis be cured? The value of Abbott method. A. SARTIS PARADOPOLOS Rev d'orthop 9, 3, xxx, 35.
- The difficulty of diagnosis of Pott's disease particularly in an advanced age. SALAZAR Arch ital di chir 9, 3, vi, 71.
- A compression apparatus for the gibbus of Pott disease. V. VEA Bull t mèm Soc de chir de Par 9, 3, xlii, 47.
- Abnormalities of the fifth lumbar transverse process associated with sciatic pain. B. H. MOORE J Bone & Joint Surg 9, 3, 466.
- Osteomyelitis of the ilium in children. C. B. WERT J Am M Am 9, 3, lxxv, 99.
- Some considerations of the sacro iliac joint. C. S. L. ROBERTS Lancet, 9, 3, cxi, 787.
- Tuberculosis of the sacro iliac joint. H. C. W. TUTTALL Lancet, 9, 3, cxi, 899.
- An unusual case of symmetrical, hereditary osteitis of the lower joints. CANTUATI Arch ital di chir 9, 3, 4, 71.
- Hydrated cyst of the hip bone. A. BUZZI Rev Assoc med argent, 9, 3, cxcv, 756.
- On cystic plasma. H. WALDENSTROM Acta chirurg. Scand 9, 3, lv, 577.
- Joint osteochondritis and osteo-arthritis deformans of the hip. PALAUS Arch ital di chir, 9, 3, vi, 7.
- Two cases of osteochondritis of the hip. KONIV Bull et mèm Soc de chir de Par 9, 3, xlii, 67.
- The ecology and pathology of osteochondritis deformans juvenilis of the hip. M. HALLER-BROCK Arch f orthop Unfall Chir 9, 3, xli, 9.
- Pseudarthrosis of the femur of twenty five years' duration recovery following operation. C. DUYAUX Bull et mèm Soc de chir de Par 9, 3, xlii, 93.
- Contra valgus hernia with shifting position of the head. W. BLOCK Arch f klin Chir 9, 3, cxxii, 704.
- Observations of the development of the normal knee preliminary report. L. R. S. VETUSO J Radiol 9, 3, 1, 35.
- Internal ligament of the knee joint. F. KORVO Therap d Gynæk 9, 3, lxx, 419.
- Bucket handle hernia. ALLEN Bull et mèm Soc de chir de Par 9, 3, xlii, 404.
- A curious case of bone resorption from osteomyelitis of the lower end of the femur. A. LAPO VETUSO Bull et mèm Soc de chir de Par 9, 3, xlii, 99.

- A phenomenon of the knee with luxation of the patella
LAVENEX. *Arch ital di chir* 19 3, vi, 73
- Densitizing osteochondritis of the knee J. MORGAN
Arch franco-belges de chir 1913, xxv, 1
- Tuberculous arthritis of the knee, cold abscess with
fistula in the thigh, healing of the fistula with the anti-
tuberculous vaccine of Griesberg. BAUDRY and GARNIERO
Bull et mémoires Soc de chir de Par 9 3, xix, 74
- The condyles of the tibia F. DISCHER. Bull et mémoires
Soc de chir de Par 9 3, xix, 29
- The condyles of the tibia LECTER. Bull et mémoires Soc
de chir de Par 19 3, xix, 133
- An osteomyelitis of the upper end of the tibia A.
LAPORTE. Bull et mémoires Soc de chir de Par 9 3, xix,
36
- Sarcoma of the tibia C. J. MacGILL, Jr. *Surg Clin*
N Am, 19 3, iii, 430
- The tibio-fibular synostosis H. RYER. *Zeitschr f*
orthop Chir 9 3, xix, 64
- Compensatory hypertrophy of the fibula A. GRISON.
Surg. Gynec & Obst, 9 3, xxvi, 354
- Anatomical types of flat foot. Nov J. JORDANO. *Rev*
d'orthop 9 3, xix, 7 [164]
- Paralytic pes cavus GALLAGHER. *Arch ital di chir*
9 3, vi, 770
- A procedure for the management of spiny foot G.
HORN. *Zeitschr f Chir* 9 3, xix, 433
- Metatarsus varus congenitus A. SCHER. *Camp Med*
Chir 9 3, i, 70
- Kocher's disease of the head of the second metatarsal
BONNARD. *Munchen med Wochenschr* 9 3, xix, 187
[164]
- Spurs of the calcaneum C. B. TELAVY, J. *Veit*
Tijdschr v Geneesk 19 3, lxxv, 496
- Some particulars in the disposition of the plantar
fascia P. BIANCO. *Pedibus Rome*, 1913, xxx, sec. chir,
1. [164]

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- Angular osteotomy COTTEMO. *Arch ital di chir*
19 3, 4, 709
- Bone grafts L. BÉRAUD. *Bruxelles méd*, 19 3, iii, 497
- The treatment of myeloid sarcoma of bone PALM.
Arch ital di chir 9 3, vi, 664
- The treatment of acute arthritis O. ARLANDER. *Am*
J Clin Med 19 3, xix, 27
- Conservative treatment of tuberculous joint and bone
diseases A. TOBY. *Vlaamsche geneesk Tijdschr* 1913,
lx, 745
- Presentation of patients with open tuberculous joints
treated by the closed method SOLIER. *Arch ital di*
chir 9 3, vi, 708
- Mandibulation of stiff joints F. G. HOBSON. *J Med*
Am Georgia, 1913, xii, 50
- Mobilization of stiff joints W. C. CAMPBELL. *J*
Arizona M Soc 9 3, xix, 205
- The prophylaxis and treatment of neurogenic contrac-
tures. PERKINS. *Zeitschr f anat Fortsch* 9 3, xix
- Transplantation of tendons H. ATTWOOD. *Am*
Surg 9 3, lxxvii, 490
- Amblyopia of the brachial plexus A. D. KAPLA.
Novy Chir Arch 9 3, 2, 344 [167]
- A new operative method for tuberculous of the shoulder
joint A. BARRY. *Zeitschr f Chir* 1913, 4, 477
- The treatment of ankylosis of the shoulder MARCONI.
Arch ital di chir 9 3, 4, 7
- The technique of arthrodesis of the shoulder H.
GORDON. *Arch orthop Unfall Chir* 1913, xxi, 57
- Cyst of the humerus and bone graft. end results. A.
MORITZ. Bull et mémoires Soc de chir de Par 1913, xix,
5
- The treatment of the flail elbow joint, with new opera-
tion of arthrodesis. W. ALLEN. *Lancet*, 1913, civ, 794
- Tendon transplantations for musculo-skeletal paralysis
G. H. STEVENSON. *Glasgow M J* 1913, xvi, 231
- Swapping finger A. SCHWITZ. *Moscow M J* 1913,
ii, 48 [167]
- The operative treatment of tuberculous synovitis H.
SCHWITZ. *Lijet. Jevsk*, 1913, xiv, 67 [167]
- The result of treatment of tuberculous synovitis by
Albee method CALANDRIA. *Arch ital di chir* 1913, vi,
7
- Tenotomy of the biceps, trachiarthrectomy GAZZAL.
11 *Arch ital di chir* 19 3, 1, 713
- Transference of the crest of the ilium for flexion con-
tracture of the hip H. C. CAMPBELL. *South M J* 9
3, xvi, 250
- The treatment of multiple deformities of the lower
joint SCARF. *Arch ital di chir* 1913, vi, 71
- The production of extra-articular ank. loos of the hip
J. E. SHERMAN. *Zeitschr f Chir* 1913, 4, 91
- Tuberculous fistula of the right knee treated by Gies-
berg colloidal vaccine. BAUDRY and GARNIERO. Bull et
mémoires Soc de chir de Par, 9 3, xix, 139
- Osteotomy for genu valgum HALLIDAY and MAC
CLAIRE. Bull et mémoires Soc de chir de Par 19 3, xix,
475
- The results of case of arthroplasty of the knee and of
the temporomandibular joint GROSIO. *Arch ital di*
chir 9 3, 1, 73
- Amputation in the region of the knee joint. H. H.
DUNN. *California State J* 31, 9 3, xxi, 73
- Tendon plastics for peroneal paralysis E. BERT.
Zeitschr f Chir 9 3, 1, 51
- The principles and technique of surgical treatment of
congenital absence of the tibia PETER. *Arch ital di*
chir 1913, 7, 4
- Lindbergh's operation for hallux valgus and hollow chev-
feet J. FRANKEL. *Zeitschr f Chir*, 1913, xix, 745
[167]
- A new modification of the operative treatment of hallux
valgus J. KUTLEY. *Ortophital* 9 3, lxxv, 413
- Contractures of the tarsus with incomplete static flat
foot and their treatment G. HORN. *Munchen med*
Wochenschr 1913, lxx, 49
- The treatment of club foot congenital and acquired E.
J. GERR. *J. Lancet*, 19 3, xix, 69
- The treatment of congenital twisted foot SCARF.
Arch ital di chir 9 3, vi, 714
- A lateral osteoponeal transplant in paralytic foot
CALANDRIA. *Arch ital di chir* 1913, vi, 74
- Lengthening of the tendo achillis H. H. GREENWOOD.
Bry J Surg 19 3, 2, 453
- Two problems resulting from kneeplasty G. B. ARA. A.
D. DEL VALLE, and F. WILDMUTH. *Prog de la chir*
Médical 9 3, xix, 309
- Two kneeplasty problems solved G. B. ARA. D. DEL
VALLE, and F. WILDMUTH. *Surg. Gynec & Obst*,
1913, xxvii, 539
- Plastic chemotherapy in partial amputations of the foot
R. MIRVET. *Am ital di chir* 9 3, 4, 30
- The advisability of early high amputation in acute
gangrene of the lower extremity with report of four cases
H. B. GILLIAM. *Ohio State M J* 9 3, xix, 245
- Conservation of the stump. COULLEARD. Bull et mémoires
Soc de chir de Par 19 3, xix, 320
- Experiences with large number of cases of amputa-
tions, particularly with reference to prostheses H.

- Bruckner and H. HAYESOV. Acta chirurg Scand 93, 1, 602
 Amputation stumps of youths. W. VERNER. Beitr klin Chir., 93, cxxviii, 59
 Are amputation stumps receiving adequate after-care? C. BEAUNE. Boston M & S J., 93, cxcviii, 542
 The usefulness of making "handless arm" of the heel in osteoplastic amputation of the foot. A. MARX. Arch ital di chir., 923, vi, 714
 Silver iod as bandaging material in operative orthopedics. C. SEARVARE. Ztschr f orthop Chir 93, 234, 79

Fractures and Dislocations

- Fracture clavic. M. K. SMITH. Surg Clin N Am 93, 2, 443
 Fracture havers. M. A. ALSTY. J Indiana State M Am 93, xvi, 29
 Microscopic examination of spontaneous fracture. HARTMA. Bull et méém Soc de chir 923, xlii, 38
 Fractures and their treatment. Vokons. Fractures and their treatment, including the treatment of compound leg injuries of the brain and spinal cord. H. MAYER. Berlin: Springer 9
 A fracture table and fluoroscopy in difficult fractures. H. M. CLUTE. Boston M & S J. 93, cxcviii, 630
 Operative treatment of certain fractures of long bones. J. J. MOOREHEAD. J Am M Am 923, lxxx, 307
 Experimental investigations on the influence of acute anoxia and splenectomy on callus formation. L. SCHWENK. Arch f klin Chir 93, cxxx, 5
 On true congenital dislocation of the shoulder. D. M. GILROY. Edinburgh M J. 93, xxi, 57
 The technique of the operative replacement in old luxations of the shoulder. L. BART. J de chir 93, xxi, 145
 Habitual luxation of the clavicle and its management. H. von OETTINGER. Med Abh 93, xviii, 164
 Luxation of the outer end of the clavicle. P. MOCQUET. Bull et méém Soc de chir de Par 923, xlii, 37
 Acromioclavicular luxation, good functional result following Cadell operation. R. BOOY. Bull et méém Soc de chir de Par 923, xlii, 363
 A modified extension bandage in acromioclavicular fracture of the humerus. L. SATTLER. Deutsche Ztschr f Chir 93, clix, 263
 Fracture of both bones of the forearm. double osteomyelitis with excellent functional result three months after the accident. C. DUJARIER. Bull et méém Soc de chir de Par 923, xlii, 260
 A comminuted fracture of the upper one third of the ulna with displacement in front of the head of the radius. A. MOCQUET. Bull et méém Soc de chir de Par 93, xlii, 36
 Fractures of the head and neck of the radius. J. GEORGE. N York M J & Med Rec 93, cxi, 47 [168]
 Luxation of the scapular and injury of the lat joint. J. POUJOL. Rochely chur. gynéc. 93, 1, 20
 Bloodless reduction of dislocation of the scapular bone. A. MOCQUET. Bull et méém Soc de chir de Par 93, xlii, 3
 The pathogenesis and mechanism of fracture of the scapular bone of the hand. A. THOILL. Acta chirurg Scand 93, lv, 490
 Irreplaceable dorsal luxation of the metacarpophalangeal joints. BOY. Deutsche med Wochenschr 93, xlii, 35
 Tarsal and metatarsal dislocations. reduction without operation. A. LARONET. Bull et méém Soc de chir de Par 923, xlii, 33
 A method of reducing dislocations of the phalanges. DUBOIS. Bull et méém Soc de chir de Par 93, xlii, 73
 Conservative versus operative treatment for retrosternal luxation. K. WACHSBERG. Zentralbl f Chir 93, 1, 514
 Spontaneous luxations. S. KLEINBERG. Ann Surg 93, lxxvii, 490
 Traumatic luxations of the spine. A. DRELLUTH. Arch franco-belges de chir 93, xxi, 97
 Compression fracture of the spine. E. P. WITKEL. Surg Clin N Am 93, iii, 509
 Fractures of the pelvis. A. P. BRJUL. Nowy Chir Arch 93, 2, 33
 False congenital dislocations. their treatment. F. CALOT. Chir y lab 93, 1, 33
 Clinical reports—congenital dislocation of the hip. L. Y. LORVING. J M Soc New Jersey 923, xxi, 30
 Congenital luxation of the hip in a paraplegic girl. CHARLES. Rev d'orthop 93, xxi, 55 [168]
 The end results of the non-operative treatment of congenital luxation of the hip. SCHLIMMER. Verhandl d Ges f Chir Moscow 9
 Bone transplantation for recurring congenital dislocation of the hip. D. MARAGLIANO. Arch ital di chir 923, vi, 709
 Reformation of the acetabulum after bloodless reduction of congenital dislocation of the hip. BARGILLI. Arch ital di chir 923, vi, 7
 Partial dislocation backward of the lower epiphysis of the femur. R. W. BOLLING. Surg Clin N Am 923, iii, 36
 Fractures of the floor of the acetabulum. E. P. WITKEL. Surg Clin N Am 923, iii, 505
 Fractures of both femora, osteosynthesis of the right femur. treatment of the fracture of the left by continued extension. excellent result on both sides. SCHWARTZ. Bull et méém Soc de chir de Par 923, xlii, 153
 Spontaneous fracture of the femur. HARTMA. Bull et méém Soc de chir de Par 93, xlii, 202
 Internal comminution of the lateral condyle of the femur with respect to the diagnosis of intra articular fracture. BIKTOPOV. Arch ital di chir 923, vi, 664
 Contribution to the treatment of intracapsular fracture of the femur. PIRRI. Arch ital di chir 923, 1, 708
 Fifty cases of fracture of the neck of the femur. DELLALIA. Arch ital di chir 923, vi, 707
 Cervicostriatic fracture of the femur. reduction without anesthesia, functional result. C. LARONET. Bull et méém Soc de chir de Par 923, xlii, 85
 Statistics of cases of fracture of the neck of the femur observed at the Russian Institute. VALLANCOLL. Arch ital di chir 923, vi, 703
 The treatment of fracture of the neck of the femur. SOLLNER. Arch ital di chir 923, vi, 708
 Contribution to the treatment of fracture of the neck of the femur with method of osteoplastic transplantation of the fibula. DELLALIA. Arch ital di chir 923, vi, 707
 The treatment of fractures of the neck of the femur. ROSA. Arch ital di chir 93, 1, 706
 The results of operative treatment of fracture of the neck of the femur. PUTTI. Arch ital di chir 923, vi, 707
 Traction fracture of the lower trochanter. J. F. LARON. Surg. Orthop & Obst 923, xxxvi, 156
 Complete epiphyseal fracture of the hip. R. W. BOLLING. Surg Clin N Am 93, iii, 357
 Roentgenograms at nine cases of osteosynthesis from fracture of the femur. C. DUJARIER. Bull et méém Soc de chir de Par 923, xlii, 36

A joint mouse in the knee with fracture of the external condyle of the femur. E P WRIGHT. *Surg Clin N Am* 9 3, 24, 513.

Location of both patellae treated by method of patellar transposition with capsular uteroplasty. A MOCHEUR. *Bull et mémoires Soc de chir de Par* 1923, xlix, 5.

Non immobilization and immediate use after suture of the patella. C DUJARRIC. *Bull et mémoires Soc de chir de Par* 9 3, xlix, 55.

Early suture and ambulatory treatment of fracture of the patella. P FRICOT. *Bull et mémoires Soc de chir de Par* 1923, xlix, 70.

Statistics of fractures of the leg. O WINTERSTEIN. *Monatsschr Unfallheilk Versicherungswesen* 9 2, xxx, 7.

The treatment of tibial subluxation. Dr F. VONICO. *Arch ital di chir* 1923, vi, 7 2.

Separation of the upper epiphysis of the tibia. A GIBSON. *Ann Surg* 9 3, lxxv, 435.

Fracture of the tibia with loss of substance. E P WRIGHT. *Surg Clin N Am* 9 3, 24, 517.

Congenital luxation of the tendons of the lateral peroneal muscles. E LARSEN and A ADRIAN. *Rev d'orthop* 1923, xxx, 5.

Forward dislocation of the upper end of the fibula with a fracture of the tibia or fibula. R H SAYREY. *Arch Radiol et Electrotherap* 9 3, xxxv, 344.

Pott's fracture. D POWELL. *Brit J Surg* 1923, 4, 3 3, 433.

A compound Dupuytren's fracture operation: end of eighteen hours with immediate closure recovery. Dr S. A. DE RIO BRAZCO. *Bull et mémoires Soc de chir de Par* 19 3, xix, 360.

Shepherd fracture. C P LORANT. *Semaine méd* 9 3, xix, 360.

Subtrochanteric dislocation of the foot backward and downward. R W BOLLING. *Surg Clin N Am*, 1923, vi, 365.

Traumatic vulnus with dislocation in the femur joint. A F O'DONNELL. *J Iowa State M Soc*, 1923, xiv, 51.

Old, irreducible luxation of the scaphocephalic articulation with fracture of the great tuberosity of the calcaneum, open reduction, arthrodensis and bone suture. J COURRY. *Bull et mémoires Soc de chir de Par* 1923, xlix, 244.

A case of recent, irreducible luxation of the scaphocephalic articulation which was cured by open reduction. P WIAAT. *Bull et mémoires Soc de chir de Par* 1923, xlix, 470.

Closed treatment of humeral fractures with posterior marginal fragment. P CARROCA. *Bull et mémoires Soc de chir de Par* 1923, xlix, 295.

Orthopedics In General

The etiology and treatment of faulty body mechanics in childhood. J C WILSON. *California State J M* 1923, xii, 43.

The problem of functional re-education of the mechanical invalid. LANTIEROCCA. *Arch ital di chir* 1923, vi, 370.

Physiotherapy records. H E FORTSCOTT. *California State J M* 1923, xii, 105.

Posture work in children. F P GIBSON. *Ann Texas State J M* 1923, xvi, 590.

The history and uses of plaster of Paris. J BRY. *Kentucky M J* 9 3, xxi, 80.

Instructions for making plaster of Paris bandages. C L STONEY. *Grace Hosp Bull Detroit*, 1923, vi, 4.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

The entrance of air into the vascular system and its removal from the right ventricle by puncture of the heart. A BIRNBAUM. *Zentralbl f Chir*, 9 3 4, 433.

Arteriovenous fistula. L C CAMARILLO. *Arch ital di chir* 9 3, vi, 645.

Arterial and arteriovenous aneurysms. L DE GAET. *Arch ital di chir* 1923, vi, 637.

Traumatic aneurysm. PEREIRA. *Arch ital di chir* 1923, vi, 64.

The surgical treatment of aneurysm. PERET. *Arch ital di chir* 1923, vi, 640.

Clinical and anatomical-pathological observations on circled aneurysms. ROBERT. *Arch ital di chir* 1923, vi, 640.

A pathological study of cases of circled aneurysm. F L MICHARD. *Surg Gynec & Obst* 1923, xxvi, 547.

Mycotic (bacterial) aneurysms of intravascular origin. A STEWART and C C WOODWARD. *Arch Int Med* 1923, xxxiii, 577.

Aneurysm of the carotid in the left carotid sinus. POULLEY and DICKER. *Bull et mémoires Soc de chir de Par* 9 3, xlix, 269.

A tear of the external carotid caused by blow in the face. E PÉREZ. *Zentralbl f Chir* 1923, 4, 3.

Injury to the carotid artery and jugular vein, with ligation and recovery. C S LAWRENCE. *J Am M Ass* 1923, lxxv, 1068.

An uncommon case of arteriovenous aneurysm of the right subclavian vessels. E CRYST. *Riforma med* 1923, xxxix, 3 8.

Aneurysm of the subclavian artery. MICHAELLO. *Arch ital di chir* 9 3, vi, 64.

Traumatic aneurysm of the left subclavian artery with rupture of the sac. CAMARILLO. *Arch ital di chir* 19 3, vi, 640.

Arteriovenous aneurysm of the radial artery. J F CORNOLIS. *Surg Clin N Am* 1923, vi, 360.

Observation of the superior vena cava of aplastic origin. RUTINGA. *Bull et mémoires Soc méd d hôp de Par* 1923, 31, xxxix, 60.

Rupture of an aneurysm of the splenic artery with fatal hemorrhage in pregnant woman. L LUNARSS and A GORNE. *Arch f Gynaek* 9 3, cxviii, 77.

Vascular occlusion of the mesenteric vessels. J W TANGHELEY. *Virginia M Month* 1923, 4, 80.

Mesenteric thrombosis, with report of two cases. S McGUIRE. *Virginia M Month* 1923, 4, 5. [189]

A double wound of the femoral artery at the level of Hinger canal caused by knife during arterial aneurysm ligature recovery. R BURDALL. *Bull et mémoires Soc de chir de Par* 1923, xlix, 360.

A femoral aneurysm of the femoral artery caused by compression. E BERNALAY. *Riforma med* 1923, xxxix, 3 5.

Traumatic popliteal aneurysm, extirpation of the sac. VINCIGUERRA. *Arch ital di chir* 9 3, vi, 639.

A note on arterial aneurysm and rupture treated by the Artythor operation. A W ADAMS. *Lancet*, 9 3, cxi, 647.

Ligation of the plantar artery on the dorsum of the foot in the second interosseous space. G B MACCART. *Arch ital di chir* 1923, vi, 505.

- Large varices. A. BARNETT. Bull et mém Soc de chir de Par. 923, xlix, 315.
- Venecose ulcer treated by Algie's method ten years ago perfect recovery. ALGIVÉ. Bull et mém Soc de chir de Par. 923, xlix, 47.
- Regarding Algie's communication on the treatment of venecose ulcer. OMBROSI. Bull et mém Soc de chir de Par. 923, xlix, 476.
- Thrombosis and embolism. A. McLELLAN and W. D. BARNETT. Chicago Med Rec. 923, xlv, 63.
- Venous thrombosis due to effort. O. I. DUBROVSKY. Semaine méd. 923, xlv, 738.
- Fat embolism. J. OMBROSI. Pubblica gaz. lek. 923, 169.
- The operative treatment of embolism of the large arteries. report of 15 cases. L. B. EMMETT. Surg. Gynec. & Obst. 923, xxxvi, 463.
- Spontaneous necrosis of the extremities and endarteritis obliterans. F. KRAHMER. Deutsche Zeitschr. f. Chirurg. 923, 387.
- Peripheral venous tension and its pathologic changes. M. VILLARD. F. S. GIBSON and P. GIFFLETT. Boston Præsent. Med. Soc. 923, xxxi, 38.
- The morphology and morphogenesis of the vascular system in grafted tumor. DUBROVSKY. Arch. ital. di chir. 923, 701.
- Contribution to vascular surgery. F. VON ARCH. ital. di chir. 923, 64.

Blood and Transfusion

- The characteristics of variations in the number of leucocytes. P. M. URBAN and M. MORTON. J. de méd. de Bordeaux, 923, xcv, 39.
- The leucocytic count and its relation to venous circulation changes. W. H. H. SMITH. N. Orleans M. & S. J. 923, vi, 640.
- Remarks on the average number of red cells in the blood of pupils of the primary schools. F. ALA. Act. med. Scand. 923, lvi, 61.
- The clinical significance of the eosinophilic cells of the blood. A. J. MINDEL. N. York M. J. & Med. Rec. 923, cxviii, 465.
- Physicochemical investigation of phagocytes. T. K. Arch. f. d. ges. Physiol. 923, cxviii, 40.
- The value and importance of blood chemistry in clinical medicine. M. BA. 107, Minnesota Med. 923, vi, 38.
- Physical and chemical studies of human blood serum. I. A study of normal subjects. II. A study of certain

more cases of nephritis. III. A study of miscellaneous disease conditions. D. W. ATCHLEY. R. F. LOHR. E. M. BERNHART. and W. W. PALMER. Arch. Int. Med. 923, xxxi, 606, 616.

The cholesterol content of the blood in anæmia, and its relation to splenic function. W. MACLEOD and C. SHERMAN. Quart. J. Med. 923, xlv, 93.

Physicochemical consideration of the blood of scalded animals (experimental study). DUBROVSKY. Arch. ital. di chir. 923, vi, 704.

Modification of the rate of sedimentation of the red corpuscles in case of malignant tumor. ALIANT. Arch. ital. di chir. 923, 1, 606.

The method of transmission of hereditary hemophilia. P. MINO. Riforma med. 923, xxxv, 371.

Irradiation of the spleen, liver, and bone marrow from the standpoint of hemostasis. G. B. FOLLE. Ann. ital. di chir. 923, ii, 309.

How many human blood groups are there? P. MINO. Riforma med. 923, xxxix, 356.

The indications for the transfusion of blood. J. S. R. 107. N. York M. J. & Med. Rec. 923, cxviii, 475.

Concerning the quantity of blood administered in blood transfusion. T. HALANDER. Nederl. Tijdschr. Geneesk. 923, lvi, 27. [169]

Transfusion through the umbilical vein in hemorrhage of the newborn. report of case. J. B. SCHUR. Am. J. Dis. Child. 923, xcv, 300.

Blood transfusion for otological diseases. H. HART. Laryngoscope, 923, xcvi, 53.

Blood transfusion for otological diseases. L. J. UNGER. Laryngoscope, 923, xcvi, 90.

Lymph Vessel and Glands

So called commercial lymph glands of the neck. E. WITTMER. Deutsche Zeitschr. f. Chirurg. 923, cxviii, 354.

Lymphangioma of the neck. J. I. THORNTON. and H. WELLS. Ann. Surg. 923, lxxv, 375. [169]

Drainage in elephantiasis. F. KONDOLLO. Zentralbl. f. Chirurg. 923, 1, 443.

Malignant blastoma of the lymph glands and lymph glandular. A. FERRERO. Arch. ital. di chir. 923, 1, 577.

Some observations upon the histologic changes in the lymphatic glands following exposure to radium. J. C. M. TIRAM. Am. J. M. Soc. 923, cxv, 469. [170]

Idiopathic lymphangitis. J. M. GONZALEZ. Brasil. med. 923, xxxviii, 203.

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

Closure of granulating wounds. H. Reverdin. Hahstedt's Atlas. H. KRAHMER. Bull. Johns Hopkins Hosp. Balt. 923, xxxv, 4.

Gentle drainage in the abdominal cavity. W. DUBROVSKY. Zentralbl. f. Chirurg. 923, 1, 546.

Salt and sugar solution. S. WINTER. Nord. Med. f. Læger. 923, lxxviii, 454.

The treatment of post-operative nausea, vomiting and distention in certain abdominal sections by the use of modified duodenal tube. C. I. A. O. Surg. Gynec. & Obst. 923, xxxv, 5.

Dressing, scarre prevention and treatment. G. M. DORR. W. M. J. R. Ba. 107. Am. J. M. Soc. 923, cxv, 40.

Antiseptic Surgery Treatment of Wounds and Infections

Wound diptheria. H. LAND. Am. Wchnsch. 923, ii, 505.

Wound diptheria. H. LAND. Arch. f. klin. Chirurg. 923, cxviii, 316.

Cases of wound diptheria in the Rostock Clinic from 1911 to 1912. L. FRIEDL and D. VOGEL. Beitr. klin. Chirurg. 923, cxviii, 56.

Experiences therapeutical. A. RITTER. Am. Wchnsch. 923, ii, 73.

Some experiences upon scarre wounds. P. MINDEL. Gaz. med. Portugal. 923, 1, 30.

Presentation of new pyrocinic-mercury. H. H. VON. E. C. WITTMER, J. H. HILL, and D. M. D. von Burg. Gynec. & Obst. 923, xxxvi, 508.

Anesthesia

- The desaturation of pepsin during surgical operations. *J. LANCET* Med. Clin. 9 3, xix, 95
- The practical application of anesthesia to major surgery. *R. E. FARR*. *Minnesota Med.* 9 3, 4
- General or local anesthesia for abdominal operations. *H. L. FORTNER*. *Wisc. med. J.* 9 3, lxviii, 583
- Factors influencing the safety of ether anesthesia. *R. M. W. REES*. *Nebraska State M. J.* 9 3, iii, 36
- The proper depth of ether anesthesia. *F. R. WOODSON*. *Atlantic M. J.* 9 3, xvi, 490
- Light ether anesthesia. *A. L. LINDENBAUM*. *Bristol M. Jour.* 9 3, xl, 89
- Open ether for the occasional anesthetist. *A. WATERS LANCET*, 9 3, cxv, 843
- A case of severe intoxication following nitrous oxide anesthesia. *A. SCHWARTZ*. *Bull. et mèm. Soc. de chir. de Par.* 9 3, xix, 548
- Nitrous oxide anesthesia. *A. LAPORTE*. *Bull. et mèm. Soc. de chir. de Par.* 9 3, xix, 499

- Fear and chloroform. *LATTIER*. *Arch. ital. di chir.* 9 3, i, 699
- Syncope from chloroform during the course of gastrectomy, subdiaphragmatic massage of the heart recovery. *PAQUET*. *Bull. et mèm. Soc. de chir. de Par.* 9 3, xix, 5
- Morphine hyaline hydrobromide administered preceding operation—report of 100 cases, with fifty checks from the obstetrical and gynecological services of Bureau Hospital. *C. D. O'LEARY*. *J. Missouri State M. Ass.* 9 3, xx, 136
- Experiences with 8,0 intravenous sodium. *A. LINDENBAUM*. *Arch. f. kl. Chir.* 9 3, cxviii, 17
- Safety of local anesthesia. *C. MILLER* and *J. A. HIGGINS*. *J. Lab. & Clin. Med.* 9 3, viii, 449
- Epidural solution as local anesthetic. *C. E. DOWMAN*. *J. Am. M. Ass.* 9 3, lxix, 1069
- Dislocation of the bulb. centers from novocaine. *R. SOCHAULT*. *Presse méd. Par.* 9 3, xxx, 170
- Experimental research on electromyography. *K. von VIERHOFF*. *Arch. f. kl. Chir.* 9 3, cxviii, 100 [171]

PHYSICO-CHEMICAL METHODS IN SURGERY

Roentgenology

- The X-rays and X-ray apparatus—an elementary course. *J. K. ROSENTHAL*. *J. Radiol.* 9 3, iv
- Further developments in the spectrometric method of March, Steingard and Fritz for the determination of the quality of X-rays. *K. STAUDT*. *Arch. Radiol. & Elect. therapy* 9 3, xxvii, 318
- Pneumomediastinum. *ALLENBY*. *Arch. ital. di chir.* 9 3, vi, 719
- The scope of the roentgenologist. report. *C. D. F. FIELD*. *J. Am. M. Ass.* 9 3, lxix, 999
- A peculiar skiagraphic appearance probably resulting from intramuscular injections. *F. P. WELCH*. *Med. Press* 9 3, cxv, 338
- The treatment of malignant tumors. *E. ROSENTHAL*. *Fortschr. d. Geb. d. Roentgenstrahlen*, 9 3, xxx, 233
- Intensive deep roentgen irradiation, its principles and clinical application. *J. H. SCHROEDER*. *Cincinnati J. M.* 9 3, ii, 74 [172]

- The effect of radiation of the ovocytes on fecundation and gestation. *A. LACAPRA* and *H. COURAUD*. *Gynec. et obst.* 9 3, vi, [173]

Radiation

- Some comments on radium technique. *W. H. GAY* and *F. M. JACOB*. *Atlantic M. J.* 9 3, xvi, 453
- The use of plastic substances in superficial radium therapy. *A. EISENBERG*, *O. MIRON*, and *O. RICHARD*. *Report de med. chir.* 9 3, xiv, 19
- The value and use of beta radium rays. *P. DUBOIS*. *Presse méd. Par.* 9 3, xxx, 43 [174]
- Some results of radium and radiotherapy. *BERNARDI*. *Brevet-mém.* 9 3, ix, 553
- Experimental research on radium therapy, including death, retardation of growth, prolongation of life, determination of sex, sterility and artificial parthenogenesis reproduction about the male. *H. LA SALLE*. *Med. J. Australia* 19 3, 463 [175]

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- Transposition of aorta. report of case (thoracic position of the aorta abdominal reflux). *J. E. SCHWARTZ*. *Nebraska State M. J.* 9 3, iii, 7
- Traumatic shock. some experimental work on crossed circulation. *M. A. McFARLANE* and *W. H. HIGGINS*. *Surg. Gynec. & Obst.* 9 3, xxvii, 542
- Cases of delayed and immediate anaphylactic shock with not on the circulatory phenomena. *J. F. CATT* and *J. A. RYLE*. *Brit. M. J.* 9 3, 35 [176]
- The pathogenesis of death from burns. *R. BRASCAUTI*. *Arch. ital. di chir.* 9 3, i, 703
- Erythromelalgia. *R. LORICER*. *Bull. et mèm. Soc. de chir. de Par.* 9 3, xix, 403
- Diabetes mellitus complicating surgery. *A. T. JONES*. *Boston M. & S. J.* 9 3, cxlviii, 483
- The pathogenesis and treatment of spontaneous pyrexia. *S. S. CHANDLER*. *West. ch. J. postgrad. obstet.* 9 3, 83 [177]

- Microbic or traumatic spreading gangrene. *E. G. GIVRA*. *Internat. J. Surg.* 9 3, xxvii, 39
- The treatment of carbuncle. *J. TESSIERO*. *Arch. de med. chir. especial* 9 3, i, 435
- The modern treatment of carbuncle. *ABRAHAM* and *SARTO*. *Pedia. e-ped.* 9 3, iii, 7
- Oriental sore in the United States. *R. A. LAMBERT*. *J. Am. M. Ass.* 9 3, lxix, 996 [178]
- The relation of the leucocyte count to intradermal and subcutaneous reactions in echinococcosis-mul. *C. M. VASSETZ*. *Riforma med.* 9 3, cxviii, 36
- Eleven cases of suppurating hydatid cysts treated by closure without drainage. *BETH and LALIBOE*. *Bull. et mèm. Soc. de chir. de Par.* 9 3, xix, 35
- The causation of neoplasms by tar. *L. PARREKH*. *Polska gaz. lek.* 9 3, i, 707 [179]
- Gonorrheal infection in Boston. *G. C. SHATTUCK*. *Boston M. & S. J.* 9 3, cxlviii, 529
- The medical practitioner and the American Society for the Control of Cancer. *J. E. RILEY*. *J. Med. Ass. Concept* 9 3, iii, 6

New disease. C. Art. Bruxelles-méd. 93 ju.
 1. Lesions mammaires de l'her. G. K. 1 M.
 W. L. Presse-méd. 93 ju. 10

Genet. Bacterial Mycotic and Prot. 20 n. 1 section

Surveillance de la dréme de l'oreille. D. C.
 Ma. Arch. de méd. chir. 3 spécial. 93
 41. The disease of the prepared soil. neglected factors in
 rural infections. H. C. Port. J. Jour. 11 M. 50
 93 ju. 33
 The relation of the hyaline of disappearance
 of circulating toxin. C. M. Morand. J. Exper.
 Méd. 93 ju. 49
 The may infect in. W. J. M. 10 ju. M. J.
 10 ju. 41
 Pyogenic blood infections. A. M. 11. Deutsche
 Arch. f. Ch. 9 ju. 370
 The disease and streptococcal infections of the skin.
 C. M. 11. J. (Arch. f. Dermat. 93 ju. 6
 The treatment of certain surgical infections. H. C.
 11. The tuberculous vaccine of Garmier.
 R. B. 11. Bull. et mémoires Soc. de chir. de P. 93
 1. 4
 The threat of surgical tuberculosis. H. C. 11.
 Bull. et mémoires Soc. de chir. de P. 93
 1. 376
 The treatment of the disease of the tuberculous. H.
 C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The treatment of the surgical complications of typhoid
 and paratyphoid. H. C. 11. J. (Arch. f. Dermat. 93
 1. 376)

Ca. gangrene. H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 1. 376
 The treatment of the disease of the tuberculous. H.
 C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The treatment of the surgical complications of typhoid
 and paratyphoid. H. C. 11. J. (Arch. f. Dermat. 93
 1. 376)

The less of the

The less of the disease of the tuberculous. H.
 C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The treatment of the surgical complications of typhoid
 and paratyphoid. H. C. 11. J. (Arch. f. Dermat. 93
 1. 376)

Exposition. Surgery

The less of the disease of the tuberculous. H.
 C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The treatment of the surgical complications of typhoid
 and paratyphoid. H. C. 11. J. (Arch. f. Dermat. 93
 1. 376)

I. The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The effect of the medicinal upon the new tissue. H. C.
 11. J. (Arch. f. Dermat. 93 ju. 1177)

Hospital and Medical Education and History

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)
 The problem of hospital cost and the training school.
 H. C. 11. J. (Arch. f. Dermat. 93 ju. 1177)

Critical and demeritory remarks in the light of the history of ancient medicine J WAGGOTT *Ann Med* 9 3, xvii, 309

Edward Jenner W HALK WHITE *Proc Roy Soc Med Lond* 1923, xvi,

Eulogy of Jenner D N MARSHALL *Siglo med* 923, 329 353

Eulogy of Jenner J F TELLO *Siglo med* 9 3 lxx, 405

Eulogy of Jenner G PITTALUGA *Siglo med* 9 3 lxx, 38

Eulogy of Pasteur P M OCLARA *Bull et mcm Soc de chir de Par* 923 xlv, 560

Pasteur as artist G MONOD *Proc Roy Soc Med Lond* 923, xvi,

Pasteur as chemist T M LOW *Proc Roy Soc Med Lond* 9 3, xvi 10

Pasteur in relation to medicine W HALK WHITE *Proc Roy Soc Med Lond* 923 xvi,

Medical Jurisprudence

The physician's right to sue employer for services performed at his request for employee not affected by the Co-operation La Wendeb vs Harlow Bakery & Lunch Room, 197 N Y Supp p 833 [177]

Surgeon who agrees to perform operation does not guarantee results Wilson Blair *Pac Rep* p 349 [179]

Responsibility of the physician in the case of an X-ray beam Stenmons vs Turner 7 Atlantic Rep p 921 [180]

Responsibility of the surgeon in the case of a hernia from hot ter bug Harber vs Gledhill, 308 Pac Rep p [186]

Care required of hospital in the treatment of the eye Derrick vs Portland Eye, Ear, Nose, and Throat Hospital 300 Pac Rep p 344

Mispractice in reducing fractures Berkhoffs Bensch 90 N W Rep p 800

SEPTEMBER, 1923

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G., C.B. Leeds
PAUL LECÈNE, Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT Genito Urinary Surgery	FRANK J. NOVAK, Jr. Surgery of the Ear
PHILIP LEWIN Orthopedic Surgery	Nose and Throat

CONTENTS

I Authors	ii
II. Index of Abstracts of Current Literature	iii
III Editor's Comment	ix x
IV Collective Review	207 212
V Abstracts of Current Literature	213 288
VI Bibliography of Current Literature	289 308

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Office: 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain: Baillière, Tindall & Cox, 8 Henrietta St. Covent Garden, London, W. C.

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Adson, A. W. 7
 Ames, A. 74
 Albala, D. 285
 Amstutz, M. 31
 Andrews, H. D. W. 3
 Aschoff, L. 28
 Baugh, H. J. 59
 Bailey, H. 59
 Bald, M. J. F. 58
 Bartlett, F. H. 26
 Bass, M. H. 26
 Bell, E. M. 37
 Berneoff, F. L. 247
 Blair, V. P. 9
 Block, H. L. 247
 Bohmson, G. 240
 Boaz, R. 279
 Boyd, G. 286
 Brady, L. 55
 Broome, A. 240
 Brown, A. 22
 Bridgett, F. 7
 Broaden, 55
 Brown, P. K. 30
 Buckman, L. T. 37
 Bueger, L. 277
 Butler, T. H. 216
 Byrnes, C. M. 28
 Carnahan, R. D. 23
 Caruandine, T. 36
 Catana, J. 76
 Cavina, G. 24
 Caedins, A. 276
 Chance, B. 5
 Christopher, F. 207
 Churchman, J. W. 287
 Coffey, W. B. 30
 Coite, O. 5
 Cronin, A. H. 264
 Culver, H. 267
 Cornish, C. O. 50
 Curtis, A. H. 51
 Cusumak, H. 80
 Dale, H. H. 20
 D'Almeida, O. 26
 Davis, D. M. 80
 Denk, W. 26
 Dietrich, 28
 Donald, L. J. 242
 Douglas, J. 29
 Downum, C. E. 225
 Downie, W. 253
 Down, J. R. 6
 Dwyer, P. 275
 Dyke, C. C. 263
 Eichenberg, A. 3
 Eshery, C. A. 28
 Enderlin, E. 30
 Einfeld, C. D. 24
 F. for E. 74
 Fells, F. H. 260
 F. J. T. 5
 Finkelstein, H. 33
 Firth, D. 243
 Fisher, E. B. 285
 Forster, V. K. 267
 Forsyth, J. A. C. 56
 Fowler, H. 244
 Frazer, W. 28
 Friedman, E. 230
 Friedman, J. 218
 Fuchs, A. 24
 Genewein, F. 3
 Giffin, H. Z. 70
 Goodby, K. 9
 Goepel, R. 38
 Gotch, O. H. 24
 Grand, H. 28
 Greenfield, S. J. 8
 Guthrie, D. 3
 Hadfield, C. F. 28
 Haggart, W. W. 286
 Halaban, R. 30
 Hardman, T. G. 245
 Hardek, M. 4
 Heale, B. 35
 Hebley, G. I. 3
 Hens, W. 9
 Hesse, E. 33
 Hesse, H. 279
 Heyd, C. G. 246
 Hill, E. 4
 Hill, J. H. 280
 Hallander, E. 247
 Hubert, L. 3
 Huck, J. G. 28
 Hunter, W. 219
 Hyman, A. 266
 Jendrick, D. 51
 Kawamura, K. 242
 Keck, A. 27
 Kemp, C. 283
 King, H. 24
 Kornicke, W. 37
 Knudsen, V. O. 7
 Knudsen, H. 267
 Lange, S. 254
 Lefson, 265
 Lefson, A. 34
 Levinsky, V. 287
 Lewis, C. D. 27
 Lewis, F. O. 8
 Lim, R. K. S. 24
 Lobos, H. R. 260
 Long, J. W. 240
 Lucida, W. H. 3
 MacAdam, W. 278
 Magdon, J. A. H. J. 264
 Mann, F. C. 52, 242
 Mason, J. C. 240
 Mathers, H. 239
 Mathews, A. A. 242
 Mats, F. 31
 Maxwell, A. F. 25
 McConnell, A. A. 245
 McDowell, H. C. 260
 McGinn, J. A. 5
 M. Iver, M. A. 286
 McVicar, C. S. 34
 Muller, R. T. J. 3
 Moeller, W. 57
 Moore, I. 20
 Moran, J. 272
 Morton, J. P. 25
 Mother, H. P. 5
 Muller, G. P. 246
 New, G. B. 20
 Nyakury, A. J. 58
 Odenratt, W. 275
 Oetova, E. 25
 O'Neill, R. F. 263
 Ott, W. O. 27
 Parsons, J. P. 5
 Patterson, H. J. 9
 Pemberton, J. de J. 6
 Penfield, W. G. 26
 Pezane, S. M. 28
 Picard, H. 283
 Pickler, H. 3
 Phelan, G. M. 57
 Playfair, K. 243
 Polak, J. O. 56
 Portis, M. M. 58
 Portis, A. 38
 Portmann, G. 75
 Poshet, L. 56
 Pfrecht, H. A. 21
 Reinhold, G. 28
 Ritter, A. 273
 Robertson, B. 266
 Rickett, 265
 Roker, F. 33
 Rorer, F. 271
 Roth, S. C. 265
 Sauer, W. E. 215
 Schantz, H. 249
 Scott, S. G. 283
 Severn, A. O. M. 26
 Seyfarth, C. 287
 Shambaugh, G. E. 17
 Sherman, D. H. 260
 Shekin, C. 278
 Sedbury, J. B. 78
 Seibenstein, 274
 Skilern, R. H. 218
 Spauld, K. 245
 Spindel, E. 54
 Stappmann, H. 278
 Strach, B. 222
 Stroganoff, 34
 Sweet, J. E. 37
 Syme, W. S. 2, 9
 Thomas, A. 237
 Thomas, G. J. 265
 Thomas, H. B. 272
 Thomson Walker, J. 26
 Truchard, J. 26
 Unger, E. 279
 Unger, L. J. 277
 Unsprung, C. W. 30
 Vamrop, B. 275
 Von Redwitz, E. 230
 Vynik, V. 247
 Wagner, A. 58, 27
 Walters, W. 265
 Watson, B. P. 57
 Walker, C. V. 30
 White, E. C. 280
 Wilcox, W. 219
 Williamson, C. S. 38
 Williamson, R. T. 5
 Wojciechowski, A. 30
 Wolstein, M. 26
 Woods, A. C. 8
 Yeong, H. H. 267, 260
 Zollinger, F. 271

CONTENTS—SEPTEMBER, 1923

COLLECTIVE REVIEW

PERI ARTERIAL SYMPATHETOMY *Fredrick Christopher M.D. Ch.* 1

207

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Head

- 1 FIMELINGHO, A. and FICKLER, H. The Plastic Repair of Skin Defects of the Jaw and Chin 3
 2 ADSON, A. W. and OTT, W. O. Preservation of the Facial Nerve in the Radical Treatment of Parotid Tumors 3

Eyes

- 3 ILLIOP, W. H. The Significance of the Tuberculin Reaction and Other Problems in Ocular Tuberculosis 3
 4 HILL, L. The Causes of Binocular Constriction of the Visual Field 4
 5 ALLEN, M. M. Anisocoria and Amblyopia Produced by Quinine 4
 6 WILLIAMS, R. T. The Recognition of Hemianopia in General Practice and Its Diagnostic Importance 4
 7 MOWLER, H. P. The Combined Intranasal and External Operation on the Lachrymal Sac—Mowler's Tonsil 4
 8 WILSON, W. J. Dacryocystostomy—Combined Methods 4
 9 CRAWFORD, B. The Union of Uterus 4
 10 BROWN, T. H. Some Unusual Results of Operations for Catarrh 4
 11 WOODS, A. C. and DILL, J. R. An Etiological Study of a Series of Optic Neuropathies 4
 12 Cases Reported of Hospital in the Treatment of the Eye 4

Ear

- 13 KETNER, A. O. and STINE, C. G. L. Sensibility of Pathological Ears to Small Differences of Loudness and Pitch Including Report on Seven Cases of Deafness 7
 14 BLOOM, T. H. The Determination of the Line of the Descending Portion of the Facial Canal in Doing the Mastoid Operation 7
 15 BRIDGES, J. and BRIDGES, S. J. Primary Thrombosis of the Middle Eustachian Tube with Secondary Infection of the Lateral Sinus 7

Nose

- 16 SAMPSON, W. Nasal Accessory Sinus Disease and Systemic Infection 7

- LEWIS, I. O. The Radical Frontal Sinus Operation, with Report of Cases 8

- SHILLER, R. H. The End Result of Radical Operations on the Accessory Sinuses 8

Mouth

- 7 WILSON, W. GOSNEY, A. H. and WILSON, W. H. and Others. A Discussion on Dental Sepsis as an Etiological Factor in Disease of Other Organs 9
 8 PETERSON, H. J. A Note on the Operative Treatment of Malignant Disease of the Tongue with Special Reference to the Tongue 9
 9 BROWN, A. P. Randa 9

Throat

- 4 SMITH, W. S. Surgical Diathermy in the Treatment of Malignant Disease of the Throat 9
 5 NICHOLS, C. B. Laryngeal Paralysis Associated with the Jugular Foramen Syndrome and Other Syndromes 10
 6 MOORE, I. Operative Procedures in the Treatment of Stenosis of the Larynx Caused by Bilateral Paralysis of the Abductor Muscles, with Special Reference to New Method by Means of Which It is Suggested that the Aryepiglottic Be Permanently Enlarged and the Pseudoepiglottis Enlarged 10
 7 PRITCHARD, A. The Importance of Infection During Laryngectomy and Contribution to the Technique of This Operation 10
 8 HERRER, L. The Enlarged Thyroid Gland from the Viewpoint of the Laryngologist 11

Neck

- 9 GUTHRIE, D. What Types of Goiter Should Receive Medical Treatment? 11
 10 PETERSEN, J. DE J. The Mortality in the Surgery of Exophthalmic Goiter 11
 11 STEIN, C. B. Tumors of the Parathyroid Glands and Their Relation to Osteomalacia 11
 12 BRYNER, C. M. An Examination of the Spinal Accessory Nerve from a Case of Bilateral Acquired Spasmodic Torticollis 11
 13 PARSONS, J. P. Enlarged Thyroid—Clinical Findings in a Series of Cases 11
 14 HERRER, L. The Enlarged Thyroid Gland from the Viewpoint of the Laryngologist 11

SURGERY OF THE NERVOUS SYSTEM

- Brain and its Coverings; Cranial Nerves**
- GRANWELL F. The Mechanical Processes in Concussion and Contusion of the Brain
- RITTER, A. Brain Injuries with Predominating General Symptoms—Their Late and Permanent Results
- GOTCH, O. H. Traumatic Paraplegia: Observations on Cases with Reference to Treatment and Prognosis
- FINE, A. The Fate of Those Suffering Head Injuries
- DOWNHAM, C. E. The Treatment of Brain Abscess by the Induction of Protective Adhesions Between the Brain Cortex and the Dura Before the Establishment of Drainage
- F. Y. T. The Administration of Hypertonic Salt Solutions for the Relief of Intracranial Pressure
- WOLLESTEIN, M. and BARTLEY, F. H. Brain Tumors in Young Children: Clinical and Pathological Study
- PERFIELD, W. G. Cranial and Intracranial Endotheliomas
- D'ALLOON, O. A Further Report on Cerebral Tumors
- DEWE, W. The Value of Pneumoventriculography (Encephalography) in Brain Diagnoses
- ANDERSON, A. W. and OTT, W. O. Preservation of the Facial Nerve in the Radical Treatment of Parotid Tumors
- BYRNES, C. M. An Examination of the Spinal Accessory Nerve from a Case of Unilateral Acquired Spasmodic Torticollis
- WILLER, C. V. Unusual Cardiac and Cerebral Metastases in Melanocarcinoma

Spinal Cord and Its Coverings

- ELESTERO, C. A. The Early Symptoms and the Diagnosis of Tumors of the Spinal Cord, with Remarks on the Surgical Treatment

Peripheral Nerves

- DRUMMOND. The End Results of Nervous System in Gunshot Wounds of the War of 1914-1918

Sympathetic Nerves

- CHRISTOPHER, F. Pen Arterial Sympathectomy
- WOJCISZKOWSKI, A. Pen-Arterial Sympathectomy
- MATTHEIS, H. Pen Arterial Sympathectomy in Arteriovascular Ganglione

SURGERY OF THE CHEST

- Trachea, Lungs, and Pleura**
- HALAMAN, R. Hydatid Cysts of the Lungs and Pleura
- Heart and Pericardium**
- WILLER, C. V. Unusual Cardiac and Cerebral Metastases in Melanocarcinoma

- CORRY, W. B. and BROWN, P. K. The Surgical Treatment of Angina Pectoris

Esophagus and Mediastinum

- PARSONS, J. P. Enlarged Thyroid—Clinical Findings in Series of Cases
- HUNTER, L. The Enlarged Thyroid Gland From the Viewpoint of the Laryngologist
- HEALING, G. F. The Metastasizing Tendency of Esophageal Carcinoma
- MILLER, R. T. J. and ANDERSON, W. D. W. Experimental Surgery of the Thoracic Esophagus

SURGERY OF THE ABDOMEN

- Abdominal Wall and Peritoneum**
- FINKELSTEIN, H. and ROSE, F. The Treatment of Tuberculosis of the Peritoneum in Children
- MATZ, F. An Unusual Tumor of the Omentum
- HEBER, E. The Surgical Pathology of the Tissue of Mesocolon, with Particular Consideration of Fissure Production
- LEIDENBERGER, A. Contractions of the Mesogastrium

Gastro-Intestinal Tract

- LEE, R. K. S. The Question of Gastric Hormone
- McVIGAN, C. S. Diagnosis in the Chronic Dyspepsias
- ORRIDGE, C. The Diagnostic Value of the Atropine Test in Pyloric Conditions
- HELLS, B. The Surgery of Pylorospasm in Nursing Infants
- BAER, M. H. Atropine in the Treatment of Congenital Pyloric Stenosis
- CARWARDINE, T. The Diagnosis of Peptic Ulcer and Its Bearing on Treatment
- KOENIGSBERG, W. The Pylorus and Predisposition to Ulcer
- SWICK, J. E., BECKMAN, L. T., THOMAS, A. and HELL, F. M. The Pathogenesis of Peptic Ulcer
- PORTER, M. M. and PORTER, S. A. Multiple Peptic Ulcers
- MANN, F. C. and WILLIAMSON, C. S. The Experimental Production of Peptic Ulcer
- GOODE, R. Direct Examination of the Stomach and Duodenum After Gastric Resection by the Intubation Method
- EVERED, E. F., KENNEDY, E. and LOW, R. D. W. Experimental Investigations on Changes in Digestion After Operations on the Stomach and Intestines
- DOUGLAS, J. Benign Tumors of the Stomach
- BORISCHANSKY, G. On Acute Perforant Processes in the Intestinal Wall—Contribution to the Knowledge of Phlegmonous Enteritis
- BRADY, K. Developmental Anomalies of the Intestines as Causes of Intestinal Obstruction
- LONG, J. W. The Value of Enterostomy in Intestinal Obstruction

- CAVITA, G. Experimental Research upon Artificial Stenosis of the Intestine
- HAMMEL, M. The Reliability of the Roentgen-Ray Diagnosis of Duodenal Ulcer
- EVFIELD, C. D. The Relative Value of X-Ray Evidence in the Diagnosis of Duodenal Ulcer
- DESQUEL, L. J. A Case of Carcinomatous Ulcer of the Duodenum
- MAH, F. C. and KAWANURA, K. Duodenectomy: A Report of an Experiment Four Years After the Operation
- BRADY, A. Primary Intestinal Phlegmon
- MATTHEW, A. A. Megacolon
- FIRTH, D. and PLAYFAIR, K. Congenital Idiopathic Dilatation of the Colon
- CARMAN, R. D. Roentgenological Signs of Cancer of the Colon
- FORSLAND, H. The Appendix and Its Role as Mesenteric
- SEKID, K. Appendicitis in Children: 4 Years of Age and Under
- MCCONNELL, A. A. and HARRISON, T. C. Abnormalities of Fixation of the Ascending Colon: The Relation of the Symptoms to the Anatomy and Findings
- CHASTON, C. G. The Reciprocal Relationship Between Appendicitis in the Female and Inflammation of the Right Adnexa
- FORBES, J. A. C. A Case of Erosion of the Rectum by an Ectopic Placenta
- SCOTT, S. G. A Method for the Opaque Meal Exam in the Stomach

Liver, Gall-Bladder, Pancreas, and Spleen

- HERR, C. C. Hepatitis, Cholelithiasis, Hydrops of Gall Bladder
- MILLER, G. P. Anaphenium Jaundice: Stimulating Biliary Duct Obstruction
- VAN, A. Melasma with Gall Stones
- FRANCO, G. M. and BOCK, H. L. A Study of the Bile Obtained by Non-Surgical Biliary Drainage, with Special Reference to Its Bacteriology
- HOLLANDER, F. Experiences with Non-Surgical Biliary Drainage (Meltzer-Lyon Test)
- BENNETT, E. I. The Change in the Blood Picture Following Splenectomy: Result of the Beginning Disturbance of Internal Secretion
- MACADAM, W. and SELLERS, C. The Cholesterol Content of the Blood in Anemia and Its Relation to Splenic Function

GYNECOLOGY

Uterus

- SCHMITZ, H. The Technique of the Treatment of Carcinoma of the Cervix Uteri with Cobaltum 60 X-Rays and Radium Rays
- MASON, J. C. Sarcoma of the Uterus

Adnexal and Peri-Uterine Conditions

- LEITCH, C. W. Primary Carcinoma of the Fallopian Tube

- CHASTON, C. G. The Reciprocal Relationship Between Appendicitis in the Female and Inflammation of the Right Adnexa

COTTE, G. and JENNISON, D. Pelvic Varicocele

Miscellaneous

- CURRIE, A. H. The Management of the Female Urinary Bladder After Operation and During Pregnancy: A Further Study of Residual Urine in Its Bearing on Urinary Tract Disturbances
- MCGILVER, J. A. The Treatment of Gonorrhea in Women
- METWELL, A. F. The Results of Radium in Gynecology
- DALE, H. H. The Value of Ergot in Obstetrical and Gynecological Practice with Special Reference to Its Present Position in the British Pharmacopoeia

OBSTETRICS

Pregnancy and Its Complications

- CURRIE, A. H. The Management of the Female Urinary Bladder After Operation and During Pregnancy: Further Study of Residual Urine in Its Bearing on Urinary Tract Disturbances
- SEIDEL, E. A Routine Treatment for Hyperemesis Gravidarum
- STROGANOFF, M. My Improved Method for the Prophylactic Treatment of Eclampsia
- BRINCEAU, Fibromatosis Complicated by Pregnancy
- BRADY, L. A Clinical Study of Ectopic Pregnancy
- FORBES, J. A. C. A Case of Erosion of the Rectum by an Ectopic Placenta

Labor and Its Complications

- POULLEY, L. and TROCHARD, J. A Critical Review of Fifty Three Cases of Rupture of the Uterus Following the Use of Hypophyseal Preparations
- POLAK, J. O. Dry Labor

Puerperium and Its Complications

- MOLLER, W. Mechanical Ileus During the Puerperium
- WARRON, B. P. The Treatment of Puerperal Infections, with Discussion
- WAGNER, A. The Use of Continuous Drop Irrigation in Puerperal Fever
- NEULAY, A. J. Puerperal Infection: Ligature or Excision of Veins
- BALDWIN, J. F. The Surgical Treatment of Certain Puerperal Infections

Newborn

- HILL, B. The Surgery of Pylorospasm in Nursing Infants
- BULLY, H. and BAGO, H. J. The Effects of Irradiation on Fetal Development
- SCHMIDT, D. H. and LONDER, H. R. Bleeding and Coagulation in the First Week of Life

- FALLA F. H. Blood Transfusion by the Cerebral Method in Hemorrhages of the Newborn 260
 M. DOUGLAS H. C. Postmortem Findings in the Newborn 260
 SIMPSON J. H. Transfusion Through the Umbilical Vein in Hemorrhage of the Newborn. Report of Case 260

Miscellaneous

- DUGAN H. H. The Value of the Cerebral and Cerebrospinal Fluid in the Central Nervous System to the Present Position in the United States 260
 YOUNG J. H. The Value of the Cerebral and Cerebrospinal Fluid in the Central Nervous System to the Present Position in the United States 260

GENITO-URINARY SURGERY

Adrenal, Kidney, and Ureter

- CLARK A. C. M. A Case of Acute Bilateral Suprarenal Hemorrhage 260
 THOMAS W. A. J. Acute Bilateral Suprarenal Hemorrhage 260
 CLARK A. C. M. The Importance of Pyelography in the Diagnosis of the Causes of Obstructive Nephropathy 260
 DUGAN H. H. On the Pathology of the Suprarenal Glands Through the Kidney 260
 MASON J. A. J. Renal Cancer in Endocrine Nephropathy 260
 CANNON A. H. Malignancy of the Ureter Duct. A Report of Cases 260
 THOMAS W. A. J. The Diagnosis of the Cause of Obstructive Nephropathy 260
 WATSON W. Surgical Treatment of the Ureter in the Case of the Kidney 260

Bladder, Urethra, and Penis

- CLARK A. H. The Management of the Female Urinary Bladder After Operation and During Pregnancy. A Further Study of the Value of the Urethra in the Urinary Tract 260
 ILLIOTT and ROBERTS. Perineal and Pelvic Cancer. A Study of the Pathology of the Perineal and Pelvic Cancer 260
 HARRIS A. H. The Pathology of the Bladder in Children 260
 CLARK A. H. and ROBERTS A. H. Primary Carcinoma of the Urethra 260

Genital Organs

- ILLIOTT and ROBERTS. Perineal and Pelvic Cancer. A Study of the Pathology of the Perineal and Pelvic Cancer 260
 LAURENCE H. V. A Study of the Pathology of the Perineal and Pelvic Cancer 260
 YOUNG J. H. Prostatectomy. Pre-operative Operation and Post-operative Treatment 260

Miscellaneous

- GIBBS H. X. Hemoglobinemia in Hemolytic Anemia 270

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

- CONSIDERATION OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC. 270
 SMITH R. Tumors of the Parathyroid Gland and Their Relation to Osteomalacia 270
 ZOLLNER F. Trauma and Tuberculosis of Bones and Joints 270
 LEITCH D. Myo-Osteoma 270
 WATSON W. Acute Osteomyelitis of the Vertebrae 270
 MASON J. H. Osteomyelitis of the Vertebrae of the Cervical Region 270
 SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC. 270
 LEITCH D. The Results of Orthopedic Treatment of Tuberculous Lesions 270

Fractures and Dislocations

- THOMAS W. A. J. The Treatment of the Fractured Bones of the Limbs by the External Fixation 270
 KNOTT F. The Treatment of the Clavicle Fractured by the External Fixation 270
 THOMAS W. A. J. The Treatment of the Cervical Fractures of the Vertebrae 270
 THOMAS W. A. J. The Treatment of the Cervical Fractures of the Vertebrae 270
 THOMAS W. A. J. The Treatment of the Cervical Fractures of the Vertebrae 270

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

- Blood Vessels 270
 THOMAS W. A. J. The Treatment of the Blood Vessels 270
 WATSON W. The Treatment of the Blood Vessels 270
 WATSON W. The Treatment of the Blood Vessels 270
 WATSON W. The Treatment of the Blood Vessels 270
 WATSON W. The Treatment of the Blood Vessels 270
 WATSON W. The Treatment of the Blood Vessels 270
 WATSON W. The Treatment of the Blood Vessels 270

Blood and Transfusion

- BRIDGEMAN J. The Change in the Blood Pressure Following Spontaneous Hemorrhage of the Brain and the Effect of Internal Secretion 270
 WATSON W. The Treatment of the Blood Vessels 270
 FALLA F. H. Blood Transfusion by the Cerebral Method in Hemorrhages of the Newborn 270
 LEITCH D. The Transfusion of Blood from the Living Donor 270
 THOMAS W. A. J. Hemorrhage of the Brain by Blood Transfusion 270
 SMITH R. Transfusion Through the Umbilical Vein in Hemorrhage of the Newborn. Report of Case 270
 WATSON W. and SMITH R. The Cholesterol Content of the Blood in Anemia and Its Relation to Splenic Function 270

Lymph Vessels and Glands

- BOYD, R. The Symptoms and Treatment of Traumatic Subcutaneous Lymphangitis of Lymph 279

Mucocutaneous

- UNGER, E. and HEINE, H. Continuous Intracutaneous Infusion 279

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

- LEWIS, A. and PICKER, H. The Plastic Repair of Skin Defects of the Jaw and Chin
- MOHR, H. P. The Combined Intranasal and External Operation on the Lachrymal Sac. Mohr's Tab.
- SEITZ, W. F. Dermatomyotomies Combined Methods
- BRIDGITT, F. The Determination of the Line of the Descending Portion of the Facial Canal in Doing the Mastoid Operation
- MOORE, I. Operative Procedures in the Treatment of Strabismus of the Larynx Caused by Bilateral Paralysis of the Abductor Muscles with Special Reference to a New Method by Means of Which It Is Suggested that the Artery May Be Permanently Enlarged and the Patient Discharged

Miscellaneous

- PIRICHETTI, A. The Importance of Infection During Laryngectomy and Contribution to the Technique of This Operation
- DOWNHAM, C. E. The Treatment of Brain Abscess by the Induction of Protective Adhesions Between the Brain Cortex and the Dura Before the Establishment of Drainage
- GOFFEL, R. Direct Resection of the Stomach and Duodenum After Gastric Resection by the Intragastric Method
- WALTERS, W. The Surgical Treatment of the Ureter in Tuberculosis of the Kidney
- THOMAS, H. B. The Treatment of Old, Ununited Fractures of Long Bones with Special Reference to the Use of the Osteopneumal Graft
- ROGER, F. The Treatment of the Clavicle Fractured by Indirect Violence
- CEENAK, H. The Importance of Gripes in the Development of Postoperative Constipation, Particularly Postoperative Stenosis

Antiseptic Surgery Treatment of Wounds and Infections

- YOUNG, H. H. WHITE, E. C. HILL, J. H., and DALL, H. A Further Discussion of Germicides and the Presentation of a New Germicide—Merxyl
- ARCHER, L., and REYNOLDS, G. Changes in the Motor Ganglion Cells in Wound Tetanus

Anesthesia

- DALL, H. H. HADFIELD, C. F. and KING, H. The Anesthetic Action of Pure Ether

- II. CH. J. G. and PIVOT, S. M. A Study of Iso-Propylamine Before and After Ether Anesthesia 28
- FRIEL, W. and GRAND, H. The Theory of Narcosis 28

PHYSICO-CHEMICAL METHODS IN SURGERY

Roentgenology

- HARRIS, M. The Reliability of the Roentgen Ray Diagnosis of Duodenal Ulcer 24
- ENFIELD, C. D. The Relative Value of X Ray Evidence in the Diagnosis of Duodenal Ulcer 24
- CARM, R. D. Roentgenological Signs of Cancer of the Colon 243
- MULLER, G. P. Amphiparmin Jaundice Simulating Biliary Duct Obstruction 246
- SCHMITZ, H. The Technique of the Treatment of Carcinoma of the Cervix Uteri with Combination X Rays and Radium Rays 249
- BAILEY, H. and BAIRD, H. J. The Effects of Irradiation on Fetal Development 50
- SCOTT, S. G. A Method for the Opacification of the Stomach 283
- DLANE, W. Measurement of Dosage by Means of Ionization Chambers 283
- KRICK, C. The Effect of the Roentgen Ray on Subacute Inflammations 83
- LAVAR, S. The New High Voltage X Ray Therapy 84
- ROSE, S. C. and MORTON, J. J. The Effect of Radium and the X Ray on Laryngeal Action 85

Radium

- SCHMITZ, H. The Technique of the Treatment of Carcinoma of the Cervix Uteri with Combination X Rays and Radium Rays 249
- MAXWELL, A. F. The Results of Radium in Gynecology 5
- ROSE, S. C. and MORTON, J. J. The Effect of Radium and the X Rays on Laryngeal Action 85

Miscellaneous

- STICK, W. S. Surgical Diathermy in the Treatment of Malignant Disease of the Throat 9
- PICARD, H. Diathermy in Surgery 85
- FINNEY, E. B. Experiments on the Bactericidal Action of the Violet Ray 285
- ALMEIDA, D. The Effect of the Ultraviolet Rays on Phagocytes 285

MISCELLANEOUS

Clinical Esthetics—General Physiological Conditions

- WILLCOX, W. GOSNEY, K., HUNTER, W. HENRY, W. and Others. A Discussion on Dental Stenosis as an Ecological Factor in Diseases of Other Organs 9
- McVICAR, C. S. Diagnosis in the Chronic Dyspepsia 34
- DOUGLAS, J. Benign Tumors of the Stomach 290
- MATTHEWS, A. A. Megacolon 242
- FISKE, D. and PLATTAIN, K. Congenital Idiopathic Dilatation of the Colon 243

FORSLAR, H. The Appendix and Its Role as Mesenteric	244	HOLLANDER, E. Experiences with Non-Surgical	247
ZOLLINGER, F. Trauma and Tuberculosis of Bones and Joints	7	CHURCHMAN, J. W. The Mechanism of Bacteremia	247
McLEOD, M. A. and HADDART, W. W. Traumatic Shock: Some Experimental Work on Cerebral Circulation	246	SAY, ARTHUR, C. Transplantation of the Sperm: Simple Method of Removing Bone Marrow for Diagnosis During Life	247
ROBERTSON, B. and BOLD, G. The Treatment of Severe Superficial Burns in Children	26	Experimental Surgery	
LAVIN, A. Preliminary Report on My Treatment of Cancer	27	MILLER, R. T. J. and ANDERSON, W. D. W. Experimental Surgery of the Thoracic Cæphagus	1
Surgical Pathology and Diagnosis			
FRANK, G. M. and BOCKUS, H. L. A Study of the Rule Obtained by Non-Surgical Fibero Drainage with Especial Reference to Its Bacteriology	247	Medical Jurisprudence	
		Care Required of Hospital in the Treatment of the	247
		Malpractice in Reducing Fractures	247

BIBLIOGRAPHY

Surgery of the Head and Neck

Head	29
Ey	29
Ear	290
Nose	29
Mouth	29
Throat	29
Neck	292

Surgery of the Nervous System

Brain and Its Coverings: Central Nerves	292
Spinal Cord and Its Coverings	293
Peripheral Nerves	293
Sympathetic Nerves	294

Surgery of the Chest

Chest Wall and Breast	294
Trachea, Lungs, and Pleura	294
Heart and Pericardium	294
Oesophagus and Mediastinum	294
Mesothorax	295

Surgery of the Abdomen

Abdominal Wall and Peritoneum	295
Gastrointestinal Tract	295
Liver, Gall Bladder, Pancreas, and Spleen	295
Mesenteria	296

Gynecology

Uterus	296
Adnexal and Per Uterine Conditions	296
External Genitals	296
Mesothorax	296

Obstetrics

Pregnancy and Its Complications	296
Labor and Its Complications	296
Puerperium and Its Complications	296
Newborn	296
Miscellaneous	296

Genito-Urinary Surgery

Urethra, Uterus, and Uterus	296
Bladder, Uterus, and Penis	296
Genital Organs	296
Miscellaneous	296

Surgery of the Bones, Joints, Muscles, Tendons

Continuity of the Bones, Joints, Muscles, Tendons	296
Surgery of the Bones, Joints, Muscles, Tendons	296
Fractures and Dislocations	296
Orthopedics in General	296

Surgery of the Blood and Lymph Systems

Blood Vessels	296
Blood and Transfusions	296
Lymph Vessels and Glands	296
Miscellaneous	296

Surgical Techniques

Operative Surgery and Technique Postoperative Treatment	296
Antiseptic Surgery Treatment of Wounds and Infections	296
Antiseptics	296

Physico-Chemical Methods in Surgery

Radiation	296
Radiation	297
Miscellaneous	297

Miscellaneous

Chemical Analysis—General Physiological Conditions	297
General Bacterial Microscopic and Protozoan Infection	297
Endocrine Glands	297
Surgical Pathology and Diagnosis	297
Experimental Surgery	297
Hospital, Medical Education and History	297
Medical Jurisprudence	297

EDITOR'S COMMENT

AMONG the journals devoted to the surgical specialties those devoted to diseases of the eye and of the ear, nose and throat are naturally the most numerous. The monthly *American Journal of Ophthalmology* edited by Edward Jackson and Clarence Loeb contains in addition to original articles, reports of proceedings of the various ophthalmological societies of the country and abstracts of important articles from other journals. A helpful feature for the busy reader is a brief abstract at the beginning of each original article indicating its character and scope. *Ophthalmic Literature* a quarterly journal also edited by Edward Jackson with the assistance of W. C. Finnoff contains, under various clinical and anatomical groupings such as glaucoma, cornea and sclera etc. a brief but comprehensive survey of ophthalmological literature from our own and foreign countries.

The bimonthly *Archives of Ophthalmology* edited by Arnold Knapp, Carl Hess, and Ward Holden, specializes in original papers on ophthalmological subjects and contains, in addition, reports of society proceedings and reports on the progress of ophthalmology.

The quarterly *Annals of Otolaryngology and Laryngology* edited by H. W. Loeb is our largest and most pretentious journal devoted to these specialties. It consists almost entirely of excellent original articles, and contains also reports of proceedings of societies.

The monthly *Laryngoscope* edited by M. A. Goldstein and A. M. Alden is also devoted to the publication of original articles and of the proceedings of the New York Academy of Medicine.

For orthopedic surgery the quarterly *Journal of Bone and Joint Surgery* edited by E. G. Brackett of Boston and H. Platt of Manchester, England, serves most admirably the function of a journal devoted to a special field of surgery. Each number contains in addition to well-written and well-illustrated original articles an extensive abstract of current orthopedic literature.

The monthly *Journal of Urology* edited by a board of five American urologists, serves a similar function for the specialty of urology. The monthly *Journal of Obstetrics and Gynecology*, edited by George W. Koornak, forms the third of a triad which represent the best of the special journals. These three journals, the *Journal of Bone and Joint Surgery*, the *Journal of Urology*, the *Journal of Obstetrics and Gynecology*, con-

sistently maintain a high standard of literary and scientific excellence which is a credit to American Surgery.

Two monthly journals, the *American Journal of Roentgenology and Radium Therapy* edited by H. M. Imboden and the *Journal of Radiology* edited by Albert T. Tyler are devoted to the specialties named. They are both printed on fine paper beautifully illustrated and present very ably the rapid progress that is constantly being made in roentgenology and radiology.

In addition to the journals already mentioned there is a large group of "borderline journals" which are of less direct interest to the surgeon, but whose pages frequently contain subjects of practical importance and significance to the surgical profession.

The *Journal of Experimental Medicine*, the *Journal of Cancer Research*, the *American Journal of Physiology*, the *Journal of Physiological Chemistry*, the *Journal of Pharmacology and Experimental Therapeutics*, the *Journal of Anatomy*, the *Journal of Infectious Diseases*, the *International Journal of Orthodontia and Dental Cosmos* to mention only the more important ones, are carefully scrutinized each month in order that articles of importance and interest therein may be brought to the attention of the readers of the ABSTRACT.

IT is unnecessary for us to call attention to Dr. Christopher's excellent review on the subject of per-arterial sympathectomy. The extensive revival of this procedure stimulated by the necessity of securing more effective results in the treatment of unhealed gunshot wounds, is of interest to every surgeon.

The number of abstracts of especial importance in this month's journal is so extensive that it is hardly possible to do more than mention them in passing.

Genesien's discussion of the mechanical processes in concussion and contusion of the brain (p. 223) is of timely interest in these days when the speeding motor car is taking its daily toll in skull fractures. Genesien's sane and logical conclusions are in rather marked contrast to the fanciful theories that obscure the discussion of brain injury in many of our textbooks.

In connection with the subject of peptic ulcer two reports of experimental work should be mentioned. Sweet and his collaborators (p. 237) discuss the pathogenesis of peptic ulcer in con-

section with the results obtained from several different experimental surgical procedures. Mann and Williamson (p. 238) report the experimental production of definite chronic, indurated ulcers by diverting the biliary pancreatic and duodenal secretion into the ileum and rendering the upper part of the small intestine acid in reaction.

Speed's clinical study of appendicitis in children (p. 245) and the article by Flakshteyn and Rohr on the treatment of tuberculosis of the peritoneum in children (p. 253) touch closely two of the most common abdominal disorders of childhood.

Long's discussion of the value of enterostomy in intestinal obstruction (p. 249) is a timely reminder of the importance of this life-saving operation.

Müller's careful description of a case of arphenamin jaundice (p. 246) calls attention to the possibility of mistaking this type of jaundice for obstructive jaundice.

A number of excellent articles in the month have are of particular interest to the gynecologist and obstetrician. Curtis' discussion of the management of the bladder after operation and during pregnancy (p. 251) Maxwell's résumé of the results of radium treatment in various pathological conditions (p. 252) Brady's study of fifty cases of ectopic pregnancy operated upon at the Johns Hopkins Hospital (p. 253) Stroganoff's description of his method of treating eclampsia based on an experience of 230 cases in Petrograd (p. 254) need only to be mentioned to be appreciated. Baklan's discussion of the indications for and

results of surgical treatment of certain types of puerperal infection (p. 258) and Watson's résumé of the pathology and general management of puerperal infection (p. 257) are helpful and suggestive. Dale calls attention to the wide variation and the uncertain content of ergot preparations (p. 261) and Polak contributes a practical and complete discussion of the management of dry labor (p. 266).

In the field of genito-urinary surgery Thomas' extensive abstract of Young's scholarly article of perineal prostatectomy based on an experience of 1,049 cases (p. 267) forms a notable contribution. Thomson-Waller, in a discussion of psychopathy (p. 262) emphasizes the important and essential steps in securing clear-cut psychograms without injury to the patient, and in interpreting the shadows obtained.

Romer's description of his method of treating fractured clavicle (p. 273) based on a long experience, as attending surgeon to the Jockey Club. Robertson's and Boyd's discussion of the treatment of the toxemia in extensive superficial burns in children (p. 286) Unger's experiences with transfusion from immunized donors (p. 277) and the experimental work of Bailey and Bagg on the effect of irradiation on fetal development (p. 259) suggest how interesting and varied are the subjects with which the program surgeon is constantly confronted. Simply to read the titles of such papers is sufficient to stimulate him with a new and real interest in his professional work.

INTERNATIONAL ABSTRACT OF SURGERY

SEPTEMBER 1923

COLLECTIVE REVIEW

PERI-ARTERIAL SYMPATHECTOMY

By FREDERICK CHRISTOPHER, M.D. CHICAGO

Assistant Surgeon St. Luke Hospital Junior Surgeon, Evanston Hospital Assistant in Surgery University of Illinois Medical School

PERI-arterial sympathectomy is a term applied by René Leriche (37) of Lyons France to the surgical removal of the sympathetic fibers situated in the wall of an artery. He has suggested the performance of this operation in vasomotor and trophic disturbances of the region supplied by the artery.

The operation was first given prominence by Leriche (37) in 1913 but he gives the credit for his research to his teacher Jaboulay who in 1889 performed the operation on the femoral artery with curative results in cases of perforating ulcer of the foot.

ANATOMICAL AND PHYSIOLOGICAL BASIS OF THE THEORY OF THE OPERATION

A relationship between the sympathetic nervous system and the blood vessels has been recognized since 1851 when Claude Bernard (8) made the discovery that when the sympathetic nerve is cut in the neck of a rabbit, the blood vessels in the ear of the same side become very much dilated. Later Bernard and other observers demonstrated that if the peripheral end of the severed nerve is stimulated electrically the ear becomes blanched, owing to a constriction of the blood vessels. Since that time our knowledge of the anatomy and physiology of these fibers has been greatly increased.

The sympathetic autonomic system is one of the four great divisions of the autonomic system, and its fibers supply the extremities. The cord cells of the sympathetic section of the autonomic system lie in that portion of the spinal

cord from the first thoracic to the second or third lumbar segments, inclusive.

The vasoconstrictor nerve fibers belong to the sympathetic autonomic system, consisting therefore of a preganglionic fiber arising in the cerebral nervous system and a post-ganglionic fiber arising from the cell of some sympathetic ganglion. The sympathetic fibers which run to the extremities arise from the paravertebral or lateral sympathetic chain of ganglia, while the fibers to the viscera emanate from the prevertebral or collateral sympathetic system of ganglia.

The post-ganglionic fibers return to the spinal nerves and are incorporated in them. The terminations of these post-ganglionic fibers are in the media of the vessel walls, but there has been some dispute as to their path in arriving at this destination. It has been commonly believed that some of the sympathetic fibers make their way to the periphery along the sheaths of the arteries, though definite proof of this is lacking, save in the case of the fibers which are sent by the sympathetic system directly to the aorta and appear to spread some distance down the larger arteries. In 1913 Todd stated that the sympathetic nerves to the vessels do not pass along the main vessel sheaths. He contended that the vessels of the limbs are supplied directly from the various nerve trunks and that vascular nerves do not pass distally as a periarterial plexus which provides branches for the coats of the vessels. In 1914, Kraemer and Todd (33) studied this subject in the vessels of the arm. A partial summary of their work is as follows:

1. The subclavian and axillary arteries differ from other arteries of the arm in receiving a nerve supply direct from the sympathetic chain.

2. All other arteries in the upper limb obtain their nerve supply from sympathetic filaments which have traveled along the spinal nerves and are distributed to the various blood vessels at irregular intervals.

3. The distal and peripheral vessels, more particularly those of the hand, receive nerve filaments at more frequent intervals than do the proximal channels.

4. The distribution of nerves to vessels corresponds roughly with the distribution of nerves to muscles and skin.

5. The fact that the subclavian trunk derives its nerve supply directly from the sympathetic chain accounts for its escape from involvement in the lesion associated with the condition known as cervical rib.

In 1914, Potts (77) published a study of the distribution of nerves of the arteries of the leg. He stated that local damage to a large artery will injure the vascular plexus at the point of damage only and will not account for changes produced in the vessel at a distance from the injured site. He maintained also that if absolute proof can be obtained of the relation between damage to the sympathetic supply of an artery and morphological changes in the vessel itself of more than local character the nerve damage must occur at some distance from the arterial tree and not simply to the sympathetic plexus as it lies on the vessel.

Lenche presents evidence which is difficult to reconcile with these observations. After decorticating the vessel for a distance of 8 to 10 centimeters, and thus injuring the sympathetic fibers at this site he finds not only a marked local constriction of the vessel but also an elevation of surface temperature of from 2 to 3 degrees over those parts distal to the sympathectomy which persists for about fifteen days, and an elevation of the systolic pressure which may be as great as 4 centimeters of mercury.

The reaction of vasodilation with hyperthermia was noted in a case reported by Halsted (7). Here, after excision of a left subclavian aneurysm, the hand and forearm became appreciably warmer than that on the sound side, this persisting for several weeks. Callander (16) cites a case observed by Babanaki and Heitz in which quadruple ligation and excision of the sac was performed for the cure of an arteriovenous aneurysm of the axillary artery. In this case the forearm and hand of the side operated upon were much

warmer four months after the operation than those of the sound side. These two cases may possibly be correlated with the observation of Knauer and Todd (33) that the subclavian and axillary vessels differ from other arteries of the arm in receiving a nerve supply direct from the sympathetic chain.

Callander (16) in his splendid contribution to the subject, from which quotations are freely taken, was able to verify the reaction of visible arterial contraction at the site of the sympathectomy but noted the reaction of vasodilation in but one case and the reaction of increased peripheral blood pressure in none.

Callander says that Lenche designates three varieties of trauma which result in disturbance of the vasomotor balance of the extremities and are the cause of certain definite clinical pictures. The first is an injury to the spinal nerve fibers in the tissue of the extremities, not necessarily in the immediate vicinity of the roots or nerves. Traumatic excitation of these sensory fibers con-

veys impulses which travel to the ganglionic and medullary centers, causing a reflex vasoconstriction of perhaps the whole extremity. In the second vasoconstriction is said to arise, not by reflex action but by direct injury to the efferent sympathetic fibers which Lenche believes lace the arteries with a peri-arterial network. When these are traumatically irritated but not destroyed, they contract and convey stronger impulses to the periphery than normal, thus causing a vasoconstriction and hypothermia. The third variety is destructive. The destruction of the vasoconstrictive element, which Lenche thinks predominates, results in a pathologic vasodilation and hyperthermia.

Thus it may be seen readily from the imagined array of lesions and the amount of possible injury to the artery and nerve, that there may result all gradations from hyperthermia to hypothermia. In every case it may be noted that there is a tendency for the normal thermal equilibrium to be established.

Ichman (36) has made careful attempts to verify Lenche's observations on dogs and concludes as follows:

The perivascular sympathectomy of Lenche does not result experimentally in the dog in the physiological changes in the extremities described by him in clinical cases.

2. Vasodilation resulting from proved total sympathectomy does not affect wound healing.

After experimenting with the rabbit, cat, and dog, Lenche (50) concludes that peri-arterial sympathectomy is to be studied only in man.

TECHNIQUE

A good description of Leriche's technique for the performance of peri-arterial sympathectomy may be found in a translation from the French by Halsted (37).

In order to achieve a pen arterial sympathectomy it is necessary to uncover the artery by the classic procedure open the cellular sheath with the bistoury separate the artery for 8 to 10 cm get hold of the inner sheath directly on the vessel wall, incise it, pull one of the lips thus made with a forceps, free it either with a bistoury or with the grooved probe completely stripping the artery to decorticate a fold of all the cellular tissue that adheres to it. More or less easily according to the cases, one is able thus to trip the artery to decorticate a fold thin to be sure but often thicker than one might expect. At a certain moment one has the impression that one is going to tear the wall of the artery but if one proceeds gently and carefully guided by the point of the bistoury or probe the freeing process can be carried on without risk of injuring the vessel.

Only twice has I had the annoyance of making a small tear in the artery the accident was without serious results. In case of necessity one would frankly resect the segment of the tear and tie the two ends, accomplishing thus by the same act a complete sympathectomy. Sometimes the forceps removes only rather short cellular fragments, at other times one removes quite definite laminae and the movement of freeing recalls, on a small scale the subserous decortication of an inflamed appendix, but one never succeeds in removing a continuous layer it is necessary to repeat the attempt several times and with perseverance to catch the sheath again, to remove thin meshes, and not to stop until one has really the feeling of having removed everything. Moreover one can verify what has been done by wetting the wound with a tampon soaked with ery warm serum the artery takes on then a whitish appearance looks as though made of felt, and one sees very clearly whether there remains still some cellular debris more or less detached.

In the course of the cellular decortication it is necessary to be careful to expose the collateral branches and guard against tearing them. This happens sometimes by using then a forceps and a ligature of coccatgut on repairs this accident without injury to the artery. In addition to the tears, which cause a spurt of pure blood there may be oozing from the tearing of the vasa vasorum.

CLINICAL RESULTS

In a paper read before the American Surgical Association Leriche (46) stated that he had performed peri-arterial sympathectomy sixty-four times in eleven cases of causalgia or equivalent syndromes, two cases of painful stumps, nineteen cases of post traumatic contractures, four cases of extensive traumatic oedema, one case of trophic oedema four cases of ischaemic sequelae one case of trophic ulcers on a stump ten cases of trophic ulcers after nerve sections, one case of a sore of the heel after medullary injury one case of varicose eczema, one case of spasmodic paralysis, three cases in which an attempt was made to modify tension of the cerebrospinal fluid two cases of Jacksonian epilepsy one case of gutta serena one case of intermittent claudication and one case of erythromelalgia. His study of cases led him to believe that pen arterial sympathectomy is often very efficacious in painful phenomena, will influence hypertonic symptoms of muscular phenomena, and is very efficacious in trophic troubles which lead to ulcers. More recently (50) he stated that it has a place in the therapy of certain primary localized sclerodermas, resistant palmar keratosis, certain alopecia, etc., and may be of use in dysfunction of the glands of internal secretion.

The operation has been done by a large number of surgeons for various conditions but the results have not been uniformly successful and have not agreed entirely with those reported by Leriche. Mazon (71) reported accidental perforation of the media during resection of the ad entia.

Forester (22) found the operation useful on the internal carotid in corneal ulcers due to injuries of the head, on the brachial artery in Raynaud's disease on the hypogastric in leucorrhea of the vulva and on the femoral artery in varicose ulcers. It is of value not only in angiospasm, but also for symptoms due to over activity of the vasodilators.

Bruening and Forster (13) have reported a successful pen arterial sympathectomy in the case of a woman of 45 years who had a severe vasomotor trophic neurosis incident to inflammation of the sheaths of the extensor tendons of the right thumb.

With regard to causalgia, the testimony of Carter (17) who examined over 1,000 cases of injuries to the peripheral nerves is of great value. The first case of causalgia was reported in 1813 by Denmark, but it was not until 1864 that Weir Mitchell (75) gave the first complete and classical description.

Causalgia (thermalgia) is an intensely painful condition almost entirely limited to certain sensory areas of the distribution of the median and sciatic nerves caused by lesions of these nerves at points more or less distant from the areas mentioned, and characterized by local vasomotor disturbances and general hypersensitiveness of the nervous system—a painful vasomotor neurosis due to irritation of a mixed nerve.

Peri-arterial sympathectomy is not of value in causalgia. The fundamental lesion in this and allied conditions is an intraneural and perineural sclerosis. The irritation thus set up in fibers at the site of injury to the nerves causes perverted afferent impulses to be sent back to the cord, and possibly to the subcortical and cortical centers. From here, efferent responses of vasodilator secretory and trophic natures are reflected to the peripheral distribution of the nerve where reaction on the end-organs and sensory corpuscles in this area is interpreted as pain.

The operative treatment of causalgia is neurolysis, though the intraneural injection of 60 per cent alcohol as suggested by Bierd and carried out by Lewis and Gatewood (7) has given very satisfactory results where neurolysis alone may not have given relief.

In the case reported by Halstead and Christopher (36) the improvement was very striking. In this instance a diagnosis of endarteritis obliterans had been made and the excruciating pain prevented sleep or walking more than half a block at a time. Varied medical treatment was tried in vain. Ten months after peri-arterial sympathectomy the patient was free from pain and on his feet almost continuously for twelve hours daily in his work as a restaurant cashier. Before the operation the leg was cold, but it now becomes warm when the patient is in bed.

Callander reports ten arterial decortications, as he prefers to term them, on six patients. He classified his cases into groups. In the first group, in which the arterial changes at the time of operation were thought to be spasmodic rather than obliterative, there was no improvement after the operation.

In the second group in which an obliterative arteritis seemed to play the predominant rôle there was one cure and two cases without improvement.

In the third group, cases of unaccounted-for pain, there was unaccounted-for pain in the thumb. Following the operation the pain disappeared, but another pain developed in the flexor group of muscles. The latter also ceased, however, and there has been no recurrence.

Straus (36, 39) reported favorably on two cases before the Chicago Surgical Society in 1922.

CONCLUSIONS

From the foregoing examination of the subject it may be seen that:

1. Peri-arterial sympathectomy has been of great help in certain conditions which otherwise were perhaps hopeless.

2. Various observers have been unable to verify certain of Leriche's clinical observations.

3. More recent discoveries of the anatomy and physiology of the sympathetic system make it very difficult to explain the clinical phenomena which Leriche has reported.

4. The subject is a very inviting field for further study and research.

BIBLIOGRAPHY

- ABADIE, C. Sympathectomie péricarotidienne. *Presse méd. Par.* 920, xxviii, 466.
- ALFORD, E. Peri-arterial sympathectomy. *Robtson med. J.* xxvii, 303.
- BARNARD, J. PROCTOR, J. and HETZL, J. Des troubles vasomoteurs et thermiques dans les paralysies et les contractions d'ordre réflex. *Ann. de méd. Par.* 9, 6, iv, 45.
- BARNARD, J. and HETZL, J. Hyperthermie locale du membre supérieur droit après résection des artères axillaires chez un blessé présentant une paralysie complète du plexus brachial du même côté. *Bull. et mém. Soc. méd. d'hôp. de Paris*, 19, 6, 31, 2234.
- BENNETT, F. C. and others. Human Vagality and Efficiency under Prolonged Restricted Diet. *Carnegie Inst. Washington, Pub. No. 250*, p. 78.
- BÉRENGER, A. Troubles trophiques très marqués localisés au niveau d'un doigt à la suite d'une lésion vasculaire par phlébite de la veine de la main. *Rev. neurol.* 914-5, xxvii, 59.
- Idem. *Formes Cliniques des Lésions des Nerfs*. Paris, 19, 6, pp. 56, 14.
- BAZ, ALON, C. Leçons sur la Physiologie et la Pathologie du Système Nerveux. 363, Vol. 1, p. 398.
- Idem. Leçons sur la Chaleur Animale. 376, p. 244.
- BOYDET, G. Les adaptations fonctionnelles au cas des artères transcatérisées. *Traité de l'oe. March.*, 920.
- BOYDET, G. Recherches sur l'irrigation des nerfs. *Compt. rend. Soc. de biol. Par.* 19, 3, April 5.
- BOYDET, G. Contribution à l'étude du traitement chirurgical de la causalgie. *Thèse Fac. Méd. de Bordeaux*, 1927.
- BROWNING, J. and FORTIER, I. Die peri-arterielle Sympathektomie an der Behandlung der am meisten trophischen Neurosen. *Zentralbl. f. Chir.* 92, xliii, 9, 3. *Int. J. Am. M. Ass.* 922, 1928, 807.
- BRUGNINO, F. and STALL, O. Ueber die physiologische Wirkung der Exstirpation des peri-arteriellen sympathischen Nervengeflechts. *Klin. Wchnschr.* 9, 2, 4, 40.
- CALLANDER, C. L. A surgical study of arterial decortication. *California State J.* 41, 92, 22, 346.

6. Ideo. Arterial decortication. *Ann Surg* 9 3, 1894, 1.
7. CARTER, H. S. On causalgia and allied painful conditions due to lesions of peripheral nerves. *Psychopathol* 9 2, 14.
8. DARTER, A. F. and BLOART, J. P. Recherches expérimentales sur le syndrome nerveux vasomoteur. *Paris Médecin*, 584.
9. DUCASTANON, M. R. Note sur quatre cas de sténose artérielle sympathique. *Bull et méém Soc de chir de Par* 9 9, xvi, 606.
10. DUCOSTE, M. Les syndromes cutanés. *Communiqué au la Soc de méd et chir de Bordeaux*, July and 9, 9 3. Gaz heb d sc méd de Bordeaux, 9 5, xxxvi, 26 8.
11. DUTY. Recherches d'histologie pathologique sur les plaies des gros vaisseaux et leurs ulcérations secondaires. Thèse de Lyon, 920.
12. FORESTIER, J. *Progrès méd* 93, xxxvii, 558.
13. GARRICK, W. H. The Involuntary Nervous System. 9 6.
14. GIBBO, E. Causalgies et syndromes douloureux d'origine sympathique. *Presse méd Par* 9 8, xxi, 584.
15. HAUPT, A. Ueber Mikrocapillarbeobachtungen bei einem Fall von Raynaud'scher Krankheit. *Ztsch f d ges exp Med* 920 4, 5.
16. HALSTED, A. E. and CHRISTOPHER, F. Peri arterial sympathectomy. *J Am M Ass* 9 3, lxxx, 73.
17. HALSTED, W. S. A striking elevation of the temperature of the hand and forearm following the removal of subclavian anastomosis and ligations of the left subclavian and axillary arteries. *Bull Johns Hopkins Hosp* Balt 920 xxxi, 9.
18. HIAS, H. and RIVERS, W. H. R. A human experiment in nerve division. *Bron*, xiii, 404.
19. HARTZ, J. Des troubles circulatoires qui accompagnent les paralysies ou les contractures post-traumatiques d'ordre réflexe. *Arch d mal de cœur* 9 7 2, 6.
20. HENRIET, H. La sympathie cervical. Étude anatomique et chirurgicale. Thèse de Paris 900 p 71. G. Carré and C. Naud 900, N° 245.
21. HOWELL, W. H. The Sympathetic Nervous System. *Textbook of Physiology* p 248.
22. KARAJANOVIC, S. Sur les cas de causalgie. *Bull et méém Soc de chir de Par* 920, Feb 9.
23. KRAMER, J. O. and TOWN, T. W. The distribution of nerves to the arteries of the arm. *Anat Rec* 914, viii, 243.
24. KROOK, A. Physiology of the capillaries. *J Physiol* 9 9 13, 456.
25. LAMOLEY, J. N. The Sympathetic Nervous System. *Schaeffer Textbook of Physiology* 900 vol 4, 6 6.
26. LERICHE, P. Peri-arterial sympathectomy. *Ann Surg* 924, lxxvi, 30.
27. LERICHE, R. De l'élargissement et de la section des nerfs péri vasculaires dans certains syndromes douloureux d'origine artérielle et dans quelques troubles trophiques. *Lyon chir* 19 3, x, 378.
28. Idem. De la causalgie ou tumeur blanche nerveuse sympathique et son traitement par la dénervation et l'excision des plaques nerveuses péri artérielles. *Presse méd Par* 9 6, xxv, 78. *Rev neurol* 9 4, p 84.
29. Idem. Du syndrome sympathique consécutif à certaines obstructions artérielles traumatiques et de son traitement par la sympathectomie péri-phérique. *Bull et méém Soc de chir de Par* 9 7 xiii, 3.
30. Idem. De la sympathectomie péri-artérielle et de ses résultats. *Presse méd* 917 xxv, 513.
31. Idem. Notes sur la causalgie et son traitement. *Lyon chir* 9 9, xvi, 53.
32. Idem. De la part du sympathique périmémeux dans la production de l'œdème anique. *Lyon chir* 9 9, xv, 63.
33. Idem. De quelques effets de la sympathectomie périmémeux supérieure. *Lyon chir* 920 xii, 99.
34. Idem. Des effets de la sympathectomie périmémeux interne chez l'homme. *Presse méd* 920, xxxiii, 30.
35. Idem. Traitement de certaines lésions éponéurales des moignons par la sympathectomie péri artérielle. *Presse méd Par* 920, xxviii, 765.
36. Idem. *Trans Am Surg Ass* 9 xxxii, 47.
37. Idem. Mésangie d'origine corticale enkystée post-traumatique. Épilepsie Jacksonienne. Trépanation après sympathectomie périmémeux dans le bot d'hémistomie. *Lyon chir* 920 xvii, 39.
38. Idem. Nature des ulcérations trophiques. *Lyon chir* 9 xxviii.
39. Idem. Some remarks on the peri arterial sympathectomy. *Ann Surg* 9 lxxxv, 385.
40. Idem. Sur l'étude expérimentale, la technique et quelques indications nouvelles de la sympathectomie péri artérielle. *Presse méd Par N* 86, 9 Oct.
41. Idem. La section du sympathique t-elle une influence sur la sensibilité périphérique? *Revue de chir* 9 4.
42. Idem. Résultats d'après des ligatures et des sections artérielles. *Congrès français de chirurgie*, Rapport, 9.
43. LERICHE, R. and CONYER, P. Sur la mécanique sympathique de l'hémistomie spontanée dans certaines plaques des artères. *Presse méd Par* 9 7 xiv, 603.
44. LERICHE, R. and HIAOCH, J. Du mode d'union de la sympathectomie périmémeux par la réparation des lésions et la construction des plaques. *Presse méd Par* 9 xiii, 860.
45. LERICHE, R. and HARTZ, J. Résultats de la sympathectomie périmémeux dans le traitement des troubles nerveux post-traumatiques d'ordre réflexe (type Babinski Froese). *Lyon chir* 9 7 iv, 754.
46. Idem. Des effets physiologiques de la sympathectomie périmémeux (réaction thermique et hyper-tension locale). *Compt rend Soc de biol Par* 9 7 lxxx, 66.
47. Idem. De l'action de la sympathectomie périmémeux sur la circulation périphérique. *Arch d mal de cœur*, 9 7 79.
48. Idem. De la réaction vaso-dilatatrice consécutive à la réaction d'un segment artérielle obstrué. *Compt rend Soc de biol Par* 9 7 lxxx, 60.
49. Idem. Influence de la sympathectomie périmémeux ou de la réaction d'un segment artérielle obstrué sur la contraction volontaire des muscles. *Compt rend Soc de biol Par* 19 7 lxxx, 89.
50. Idem. De la réaction vasodilatatrice. *Compt rend Soc de biol Par* 9 7 lxxx, 100.
51. LERICHE, R. and FOUCAUD, A. Sur quelques facteurs physiologiques élémentaires intervenant dans l'évolution des lésions traumatiques des vaisseaux. *Lyon chir* 920 xvii, 242.

6. Idem. Étude de la circulation capillaire chez l'homme. L'excitation des nerfs sympathiques périphériques et la lésure des artères. Lyon chir 1920 xvii, 701.
61. Idem. Adaptation fonctionnelle des artères lésées à l'entendre nouvelle de leur territoire de distribution et conséquences thérapeutiques de cette notion. Bull et mémo Soc de chir de Par 1920, xli, 4.
64. Idem. Quelques déductions thérapeutiques basées sur la physiologie pathologique des artères brachiales. Lyon chir 1920, xvii, 50.
65. Idem. Sur quelques faits de physiologie pathologique touchant les blessures du sympathique périphérique, la contusion artérielle et l'oblitération spontanée des artères défectueuses par projectile. Bull et mémo Soc de chir de Par 1920, xv, 78.
66. LITREY J. J. E. Traité des Sections Nerveuses, Physiologie Pathologique Indications, Procédés Opératoires. Paris. Baillière 873.
67. LEWIS D. and G. THOMPSON, W. The treatment of cyanosis. J Am M Ass, 1920, lxxv.
68. LOR R. J. and HALLER, O. L. Traitement de la cyanose du membre et troubles périphériques graves par la lésure du nerf au coude. Bull et mémo d'hôp de Par 1920, xlii, 30.
69. MARIE, P. and BÉRYER, A. L'indivisibilité chirurgicale des nerfs. Rev neurol 1919-20, xxxviii, 280.
70. Idem. Une forme douloureuse des blessures du nerf médian par plaques de guerre. Presse méd, Par 1920, xliii, 8. Bull de l'Acad de méd 1920, xli, 7.
71. MATOVS E. Serratus med 1920, x, 93.
72. MATOVS E. Serratus med 1920, x, 93.
73. MICKEL, H. and BÉRYER, A. De l'importance des lésions vasculaires associées aux lésions des nerfs périphériques dans les plaques de guerre. Bull et mémo Soc méd d'hôp de Par 1920, xlii, 201.
74. Idem. Sur les formes douloureuses des nerfs périphériques. Rev neurol 1919-20, xxxviii, 25.
75. Idem. Les signes chirurgicaux des lésions de l'appareil vasculaire dans les blessures des membres. Presse méd Par 1920, xlii, 33.
76. MITCHELL, S. W., MONTGOMERY C. and KEEN, W. Gunshot Wounds and Other Injuries of Nerves. Philadelphia. Lippincott, 863.
77. POLICARD, A. U procédé simple d'étude directe de la circulation capillaire chez l'homme la micro-angioscopie. Compt rend Soc méd d'hôp de Lyon, 1920, 99.
78. POTTS L. W. The distribution of nerves to the arteries of the leg. Anat Anzeiger 1920, xlii, 58.
79. ROCHER and FERRAND. Sympathétisme périphérique quatre observations ayant donné d'excellents résultats. Paris méd 1920, 8, 22.
80. SECARD, J. A. Traitement de la sévère du membre par l'excision tronculaire. Bull et mémo Soc méd d'hôp de Par 1920, xlii, 9. Bull et mémo Soc méd d'hôp de Par 1920, xlii, 9.
81. Idem. Blessures de guerre traitement de certaines algies et acro-constrictures rebelles par l'excision tronculaire locale. Bull et mémo Soc méd d'hôp de Par 1920, xlii, 21.
82. Idem. Traitement des sévères douloureuses de guerre (cyaniques) par l'excision tronculaire locale. Presse méd Par 1920, xlii, 21.
83. SECARD, J. A., DUBOIS L., and JORDAN. Contribution à l'étude médico-chirurgicale des blessures des nerfs. Presse méd Par 1920, xlii, 50.
84. SOEHOVI, V. Solle sympathetische periferische Nervus. Med. Abh. Wien, 1920, 10.
85. SOEHOVI, V. A. ROL, F. VILLARD, and CHAMBER. Traité Chirurgical de Neurologie de Guerre. Paris. Alcan, 1920, 8.
86. SOCIÉTÉ. A propos de la sténose artérielle. Bull et mémo Soc de chir de Par 1920, xlii, 910.
87. SOCIÉTÉ. A propos de la sténose artérielle. Notes sur les cas de sténose artérielle, sténose artérielle, syndrome cyanique consécutif. Bull et mémo Soc de chir de Par 1920, xlii, 805.
88. SOCIÉTÉ. A. Sympathétisme dans certaines formes douloureuses non traitées par le cas de croutchoc. Rev neurol, 1920, xlii, 301.
89. STOFFER, J. S. B. Thermalgia (cyanique). Lancet 1920, 95.
90. Idem. Trophic disturbances in gunshot injuries of peripheral nerves. Lancet, 1920, 95.
91. STRAIN D. C. Pen arterial sympathetomy in the treatment of cyanosis. Tr Chicago Surg Soc Nov 1920, Surg Gynec & Obst 1921, xxxvi, 891.
92. TAYLOR, C. O. Section of peripheral sympathetomy for cyanosis. Polychrome, 1920, xlii, 749.
93. THOMAS, A. Le névrosisme périphérique dans les cas familiaux de maladie paralytique. Paris méd 1920, xli, 4.
94. THOMAS, A. and VALLANT L. Le syndrome artériel dans la cyanose intermittente du membre inférieur. Paris méd 1920, xli, 9.
95. THOMAS, A. Les blessures des Nerfs brachiaux des Lésions Nerveuses Périphériques par Blessures de Guerre. Paris. Masson, 1920, 6.
96. TOWN, T. W. Blood vessel changes consequent on nervous lesions. Nervous & Mental Dis 1920, xli, 430.
97. Idem. Indications of nerve lesions in certain pathological conditions of blood vessels. Lancet, 1920, 37.
98. TURPIN. Paralyse d'origine rachidienne traitée par la sympathétomie périphérique. Paris méd 1920, xlii, 63.
99. Idem. Contusion de l'épaule paralysée totale de l'avant bras et de la main sympathetique paralytique. Bull et mémo Soc de chir de Par 1920, xlii, 74.
100. VETRAMAS J. A. and SCHLESINGER, V. D. Traumatisme du mal perforant. Rev méd de la Suisse Rom 1920, xxxviii, 63.
101. VILLARD, C. La sténose artérielle. Bull et mémo Soc de chir de Par 1920, xlii, 910.
102. VILLARD, C. G. P. De la sympathétomie périphérique comme traitement des douleurs cancéreuses après les observations de crânes amputés subitains de la 8 région. Fac de méd et de pharmacie de Lyon année scolaire 1920-1921, 3.
103. WALTER, C. Not sur l'intervention chirurgicale dans les blessures des nerfs des membres par projectiles de guerre. Communication à l'Acad de méd Paris, 1920, xlii, 55.
104. Idem. Sur l'intervention chirurgicale dans les lésions des troncs nerveux des membres par projectiles de guerre. Gas méd de Par 1920, xlii, 433.
105. WILKIN. Beobachtungen und anatomopathologische Darstellungen der Nervenkapillaren am lebenden Menschen. Deutsche Arch f klin Med 1920, cxix.

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

HEAD

Haebsberg, A. and Pichler H. The Plastic Repair of Skin Defect of the Jaw and Chin (Über den Ersatz von Kiefer und Kinn mit Idealen) Arch f. Chir. 9, 1930, 337

In the treatment of defects of the jaw caused by trauma the operative removal of neoplasms is important to provide immediate relief by means of a provisional splint. Later a plastic operation can be done which will render the prosthesis unnecessary.

The defect may be repaired by a plastic procedure using tissue from the surrounding parts or by the free transplantation of bone obtained from a distant part of the body. The first method (that of Krause and Rankinheuer) (fragment of bone left attached to its old bed by a pedicle of muscle is employed) the removal of the fragment is important to avoid injury to the buccal mucous membrane. After sufficient mobilization the fragment is laid in its new bed, here it is held in place by dovetailing and if necessary by one or two sutures. For from two to four weeks the lower teeth are fastened to the upper by ligatures nourishment being given through gaps between the teeth remaining.

This flap procedure is used sixty times on sixty patients (four times laterally). The result is definitely successful in fifty cases and apparently successful four. In one case it was successful on one side only and in five it failed. In the latter operation of the tail is must be situated to chronic ophthitis is present before the operation.

Free bone transplantation was employed in eleven more cases. The transplant was taken from the rest of the diaphysis of the tibia in fourteen cases each divided from the rib in one case. After both stumps of the jaw have been exposed and freshened a pattern is cut from thick beef or lead which will reproduce the curve of the maxillary arch and extend if necessary on both fragments. A pedicle draped fragment is then laid in the wound and the transplanted is hauled from the alveolar sockets to the lead pattern. The piece of bone is then immediately divided, the defect then properly filled and the soft parts are drawn over it as far as possible. Wire sutures should not be used during the operation and the after treatment the prosthesis is left in the mouth to keep the maxillary bones and the transplant in position.

Of the patients operated on by this method, four were completely cured, three were benefited

more remained uncured, and four died. As three of the deaths were probably due to the effects of the anesthetic, the operation should be performed under local or conduction anesthesia if possible.

In cases in which bone transplantation cannot be carried out, permanent splint should be worn. The authors give full directions for making such splint.

For the repair of extensive cutaneous defects of the chin the authors used the pedicle flap formed from the scalp, each pedicle of which contained a temporal artery. The hairless skin of the forehead was turned upward. The defect on the head was covered by Thiersch grafts. The method and the results of the operation are shown in cuts.

Of special importance in the treatment of these injuries is the co-operation of a dentist with the surgical and surgeon with dental training.

(HARRIS, C.)

EYES

Luedde W. H. The Significance of the Tuberculin Reaction and Other Problems I. Ocular Tuberculosis. In J. Ophth. 9, 3, 4, 6

Luedde uses much smaller amounts of tuberculin than he employed formerly, his diagnostic doses begin as low as 0.001 mgm of old tuberculin. He states that his close observation of focal ocular reaction may be detected. Rarely does he use more than 0.003 mgm of old tuberculin for diagnosis, and seldom more than that amount of any tuberculin treatment.

To illustrate some of the problems he mentions number of cases he has treated. In the case of a boy there seemed to be an associated hereditary lesion which was unsuspected until a nodular keratitis became more under treatment with tuberculin. A tuberculin treatment was quickly followed by improvement.

Ocular tuberculosis seems to be relatively as common as persons with pulmonary tuberculosis and pulmonary tuberculosis relatively uncommon. Those with ocular tuberculosis. In the majority of persons showing a focal ocular reaction there is focal infection of the nasal mucosa. To explain this fact Luedde cites several cases in which it seemed that the patient with ocular tuberculosis had been recently exposed to persons with pulmonary tuberculosis. Luedde assumes that the fine tuberculous spray coughed up as implanted in the nasal mucosa and the conjunctiva. The person with pulmonary tuberculosis does not infect his own nasal mucosa because when he coughs it does not get in.

secretion into the nose as the soft palate is raised and the spray is sent through the mouth.

Several cases of typical ocular tuberculosis have been associated with infections in the posterior nasal chambers and tonsils. Drainage of the sinuses and tonsillectomy were followed by marked improvement or healing of the ocular condition without the use of tuberculin.

Three explanations are given:

1. The nasopharyngeal disease may be the actual focus of tuberculous infection which causes the ocular disease by diffusion of toxins.

2. The nasopharyngeal disease may not be tuberculous, yet may act by lowering the resistance of the ocular tissues to the infection.

3. It may deny that the focal reactions to test injections of tuberculin have any diagnostic significance.

Luedde sent out a questionnaire to a number of prominent pathologists and ophthalmologists interested in pathology to determine better the focal reaction of tuberculin was generally regarded today as having specific diagnostic importance. There was some difference of opinion. Luedde draws the following conclusions:

1. A focal ocular reaction caused by test injection of tuberculin renders the diagnosis of ocular tuberculosis highly probable, but does not make it absolutely positive.

The therapeutic benefits obtained from the use of tuberculin in ocular tuberculosis must be recognized but can be explained rationally either as specific or a non-specific effect.

2. Clinical experience demonstrates that the radical elimination of focal infections, especially those of the nasopharynx, and the proper treatment of any coexisting constitutional disease will render less frequent the indications for the use of tuberculin either as a diagnostic or therapeutic agent in ophthalmic practice. Thomas D. Allen, M.D.

Hill, E. The Causes of Bitemporal Contraction of the Visual Field. *Am J Ophth* 9:3, 74, 57.

The forty cases presented in this article call attention to the different forms of visual field impairment as they may occur in hypopituitarism with or without convulsions, with pituitary headache, pituitary disturbance in relation to infection, hyperpituitarism, cerebral syphilis, hydrocephalus and tumors.

Temporally contracted fields, particularly in the upper quadrants, are usually found when the pituitary is enlarged. Tendencies to homonymous hemianopsia are fairly frequent.

The clinical symptoms and signs of hypopituitarism are discussed in detail and twenty-seven cases in the series classed as hypopituitary are listed. In nineteen the eyegrounds were normal; in three there was primary optic atrophy; in another there was pallor of the temporal quadrants of the disc; in two the discs were hyperemic; in blurred edges; in one the discs were covered by exudate and

in one there were choked discs. Sixteen cases showed upper temporal slants in the visual fields; fourteen, enlarged blind spots; four, an upper temporal quadrant defect for red in the field of one eye; and four, an upper temporal quadrant scotoma. There was also bitemporal contraction as great as below homonymous hemianopsia, concentric contraction and tubular fields. Among the patients with hypopituitarism, twelve suffered from recurrent convulsions. Seven showed bilateral upper temporal contraction; four unilateral upper temporal contraction; and one tendency to homonymous hemianopsia. The type of pituitary headache the deep bitemporal pain described by Parke referred to. Temporal contraction of the visual fields should be a regular finding in these cases. Careful perimetry with the use of small test objects will reveal upper temporal slants which are missed in casual charting of the fields.

In three hyperpituitary cases the fields showed evidences of pressure upon the chiasm. In cerebral syphilis, bitemporal limitation is the most frequent form of visual field defect. This was present in both of the thoracic cases.

Two cases of hydrocephalus illustrate the effect of this condition upon the optic chiasm. The field differed from the most common fields of peridural enlargement in that the upper temporal quadrants were no more contracted than the lower. Another case in this group showed bitemporal contraction which at times was greater in the upper quadrant.

The six cases of tumor all showed fields characteristic of pressure upon the chiasm. One was cured by operation and the others improved under treatment.

In conclusion, the author emphasizes the peculiar distribution of the visual fibers in the chiasm and in the tract beyond which show characteristic changes in the field of vision. More attention should be given to perimetry in the early diagnosis of slighter disorders of the region of the chiasm and also those remote therefrom which exert secondary effect through the intervention of hydrocephalus. The use of small test objects is urged as the only indices toward bitemporal hemianopsia. (A. B. T. Allen, M.D.)

Amstutz, M. M. Anisometropia and Amblyopia Produced by Quinine. *Annals of the New York Academy of Medicine* 1934, 34, 490.

The author brings out the following points: Quinine is one of the most important drugs causing anisometropia or amblyopia.

The condition occurs usually after the administration of moderate doses (0.8 gram) over a period of days.

Of the various preparations, optochin has caused most cases, the probable being due to improper preparation and standardization.

The ocular manifestation is usually bilateral. During the acute stage, the vision is

proved by treatment. Usually there is permanent damage to the optic nerve.

5. The treatment is primarily prophylactic, namely the education of the medical profession as a whole as to the method of administering quinine and as to the prodromal symptoms of ocular toxicity. The active treatment consists in the administration of vasodilating drugs—nitroglycerin, nitrates followed by gradually increased hypotensive doses of strychnine.

The author reports a case of malaria in which the outstanding feature was the fundus picture in the left eye, which showed a marked pallor of the papilla with blurred margins and a large peripapillary and circumpapillary zone of retinal pallor extending almost to the margin of the peripheral retina. On account of the retinal pallor the picture somewhat resembled that of embolism of the central retinal artery. The media of the right eye was so fogged that even red reflex could not be obtained. The condition improved considerably under treatment with vasodilating drugs and strychnine but permanent trophy of the discs remained.

FRA. LIN P. SCHWETTER, M.D.

Williamson, R. T. The Recognition of Hemianopsia in General Practice, and Its Diagnostic Importance. *Practitioner* 93: 376.

Williamson advocates determining the field of vision in all cases of cerebral lesions. In sudden onset in many acute cerebral diseases signs of hemianopsia do not appear and the symptoms have been attributed to other than focal brain lesions. If the fields of vision are determined, definite hemianopsia may be revealed.

Three cases are reported in which hemianopsia was present when no other localizing symptom was found and the patient did not complain of any defect in vision. The sudden appearance of cerebral symptoms was followed by apparently prompt recovery but the hemianopsia remained to show the location and the nature of the lesion.

In the acute cases the hemianopsia is due to softening in the region of the posterior cerebral artery following embolism or thrombosis. In the chronic cases it is due to tumor, abscess, basal meningitis, etc.

VICTOR WESTCOTT, M.D.

Moerber H. P. The Combined Intranasal and External Operation on the Lachrymal Sac. *Moerber Text. A. Orl. Rhinol. & Laryngol.* 93: 3333.

Sauer W. E. Dacryorhinostomy; Combined Methods. *A. Orl. Rhinol. & Laryngol.* 93: 3333.

Moerber makes a straight incision at about the nasal edge of the lachrymal sac, clear down to the bone, and lifts the sac from its bed. On account of the thickness of the lachrymal bone in the posterior portion of the bed and the thickness of the ascending process of the maxilla in the anterior portion of the bed he plunges a probe through the thin

portion and then enlarges this opening from either the nasal or the ocular side. Before this is done he removes the anterior portion of the middle turbinate and corrects any deviation of the septum which may be present. Consequently he performs two operations, allowing the wound of the first to heal before performing the second. At the second operation he cures the remaining anterior ethmoid cells, removes the nasal wall of the lachrymal sac and duct completely as far down as possible, and sutures the anterior nasal edge of the sac to the perosteum and the subcutaneous tissue at the anterior edge of the nasal opening. He then closes the skin incision very carefully.

Moerber claims this operation can be done on the simplest or the most complicated cases of lachrymal obstruction or disease and that practically all of it can be done with good exposure. His results in seventy cases, which appear to be unusually good, he gives in tabular form.

Sauer emphasizes the fact that the anotomy of the region is not always constant; that in some cases the middle turbinate lies on the position of the lachrymal sac, in others is anterior and in still others is posterior to this position. He introduces

Ziegler probe through the lower canaliculus and prunes it into the nose low down, from the bed of the lachrymal sac. He then outlines definitely the portion he wishes to enlarge. To effect the enlargement he uses a burr from the nasal side removing the anterior end of the middle turbinate and the anterior ethmoid cells in part, if necessary. He states that he has obtained very good results and claims that his method is more simple than others described. It cannot be used, however, in complicated cases of infection.

The article contains cuts illustrating both of these operations.

THOMAS D. ALLAN, M.D.

Chance, B. The Etiology of Uveitis. *Am. J. Ophth.* 93: 77, 384.

Uveitis is an endophthalmitis, either primary when the original site of the disease is in the iris or ciliary body or secondary when an affection of neighboring parts has been transmitted to the iris or ciliary body. Its origin is either exogenous or endogenous. Although some cases must be considered non-bacterial, the condition is usually dependent upon micro-organisms or their toxins. The poison is probably present in the aqueous humor and reaches it through the blood stream.

In the experience of the author chronic uveitis is rare in the first fifteen years of life and in extreme old age. It is most common between the twentieth and fortieth years and more common in women than in men. A greater number of cases are reported from northern regions than from warmer regions, and during damp seasons than in dry. The frequency of primary uveitis among all types of ocular disease is from 1 to 3 per cent. Generally it is unilateral. In bilateral cases it usually does not begin on both sides at the same time.

included chronic sphenoiditis, ethmoiditis complicated by sphenoiditis, infection of the antra, and pansinusitis. The cases in the acute stage were all cases of retrobulbar neuritis showing normal fundi. The operative results in these cases were excellent. Of the cases in the trophic stage 7 per cent showed a picture of primary atrophy of the papillomacular bundle and the rest showed evidence of preceding inflammation around the nerve head.

There were ten cases in which brain tumors were responsible for the disorder: in four a tumor of the cerebellopontine angle, in two a hypophyseal tumor, in two, a tumor of the cerebrum, in one tumor of the floor of the fourth ventricle and in one, prechiasmatic tumor of the left optic nerve.

There were five cases in which multiple sclerosis appeared to be the causative factor.

Of ten cases of toxic amblyopia two were due to ethyl alcohol and the rest to methyl alcohol. Five of the patients recovered in the atrophic stage showed the picture of atrophy of the papillomacular bundle. Four showed primary optic atrophy and one in the acute stage showed an optic neuritis.

There were eleven cases in which definite diagnoses could not be made. Five showed primary optic atrophy, four a secondary atrophy, and three an atrophy localized especially in the papillomacular bundles.

In the authors' opinion it seems clear that the type of optic nerve disturbance caused by sinus disease is generally rather definite clinically. The picture constantly observed is that of retrobulbar nerve disturbance diminished vision, the defect being in the central field, normal field outlines, and normal fundi. Their studies indicate that inflammation and elevation of the optic disc must be an exception rather than the rule in disorders of the optic nerve caused by sinus disease.

A. B. DYCKER, M.D.

RAR

Knudsen, V. O. and Shambaugh, G. E. The Sensibility of Pathological Ears to Small Differences of Loudness and Pitch, Including Report on Seven Cases of Dipacusis. *Laryngoscope* 9:3 2222, 1913.

This is a preliminary report on research on the sensibility of the ear to small differences of loudness and pitch, and is not presented as a practical addition and in the diagnosis or treatment of ear conditions, although this will probably develop later and principally along the lines of improvement in hearing devices.

The authors point out that to prescribe artificial aids for hearing intelligently it is essential to know the sensibility of the ear to small differences of loudness and pitch, since the interpretation of speech and musical sounds requires this capacity. If the pitch and intensity discrimination power is normal in pathologic ear appropriate amplification of sounds restores normal hearing; if it is subnormal mere amplification is not sufficient.

The method of just discernible differences in loudness and pitch is employed. The source of sound used is a telephone receiver actuated by energy from a vacuum tube oscillator producing tones between 30 and 30,000 d.v. The circuit is so designed that the tone emitted will fluctuate abruptly from a tone of one loudness to a tone of greater or less loudness of equal duration at a rate of 50 per minute.

If the difference in loudness of the two tones is greater than the smallest perceptible difference for the ear under test, the two tones will be heard as different tones; otherwise they will be heard as a steady tone.

A similar procedure is used for pitch except that the frequency instead of the intensity of tone is made to fluctuate alternately.

It was found that the normal ear can perceive smaller percentages of change in loudness for moderate and loud tones—a difference in about 10 per cent or 400 gradations of loudness for tones of medium pitch—than for low tones. The sensibility to small differences of loudness depends on the pitch but the average curve for nineteen ears indicated that sensibility to loudness is almost independent of the pitch over the range used in speech and music. Average curves showed that for higher tones the normal ear can perceive difference of pitch corresponding to one twentieth of a semitone or about 1000 gradations of pitch within the audible range.

In series of pathologic ears affected by various types of fixation deafness, nerve degeneration, or dipacusis and combinations, the results indicated that these processes do not greatly affect the pitch- and intensity-differentiating mechanisms.

STANLEY A. SCHLESINGER, M.D.

Bridgett, F. The Determination of the Line of the Descending Portion of the Facial Canal in Doing the Mastoid Operation. *Laryngoscope* 9:3 2222, 1913.

On the basis of a series of specimens of macerated temporal bones, the author points out the established landmarks viz: (1) the supermental triangle, (2) the linea temporalis, (3) the posterosuperior wall of the meatus, and (4) the bulging on the inner wall of the mastoid cavity produced by the sigmoid groove.

In the curetted and cleaned out mastoid cavity the operator does not have a well established landmark corresponding to the descending portion of the aqueductus fallopiae below the point at its inner turn on the inner wall of the antrum to its termination at the stylo-mastoid foramen. The author points out that the digastric fossa invariably leads from behind forward, directly to the stylo-mastoid foramen. When the cortex of the mastoid cavity is removed and the cellular structure everted there is a ridge corresponding to the digastric groove which is formed by the outward and downward growth of the mastoid process. Internally the digastric groove leads invariably to the stylo-mastoid foramen.

This point in the mastoid cavity at the juncture of the ridge with the posterior wall of the external auditory canal, which corresponds to the stylo-mastoid foramen externally the author calls the *infra mastoid juncture*. A line connecting this juncture with the inner wall of the eustachian tube maps out the facial canal. FRANKLIN P. SCHWARTZ, M.D.

Friedman, J. and Greenfield, S. J. Primary Thrombosis of the Mastoid Emissary Vein with Secondary Involvement of the Lateral Sinus. *Laryngoscope* 9 3, XXXIII 347

After reviewing briefly the gross and topographical anatomy of the mastoid emissary veins, the authors discuss the mode of infection of these veins. Secondary involvement is not uncommon and usually follows suppuration of the post-auricular glands, involvement of posterior groups of mastoid cells, or thrombosis of the lateral sinus. In discussing primary involvement of the emissary the authors refer to infection of this structure with secondary involvement of the lateral sinus, although the emissary was infected secondarily to mastoiditis. They report a case of this character. A complete simple mastoidectomy was performed. The lateral sinus was found normal. The thrombus in the emissary vein was traced as far as the lateral sinus. The vein was left undisturbed at the primary operation.

The temperature, pulse, and blood count were rather characteristic of systemic infection although blood cultures were sterile. The condition became more serious until the jugular vein was ligated, the lateral sinus was opened, and the thrombosed emissary had sloughed away. Recovery was uneventful except for a transient acute nephritis which cleared up. SHIMMUR A. SCHWARTZ, M.D.

NOSE

Syme W. S. Nasal Accessory Sinus Disease and Systemic Infection. *Practitioner* 9 3, CX, 353

Syme urges examinations of the accessory sinuses when a search is made for a focus of infection and cites several cases in which removal of the infection cleared up the general trouble. The most frequent symptoms produced by the sinus infection are nasal catarrh, post-nasal dripping and frequent head-aches. The only method of proving that the antrum is not the focus of infection is puncture and lavage. In negative cases no secretion except possibly slight traces of mucus is obtained. Antrum disease may occur at any age. O. M. RORTY, M.D.

Lewis, F. O. The Radical Frontal Sinus Operation, with Report of Cases. *Ann. Otol. Rhinol. & Laryngol.* 9 3, XXXI, 305

The author believes that in a large percentage of cases in which there is a chronic suppurative process of the frontal sinus the radical operation is the method giving greatest assurance of permanent relief from such distressing symptoms as recurring or per-

sistent pain and headaches, purulent nasal and post-nasal discharge, alarming vertigo, gastro-labial lesions, and focal infections. In cases with external fistulae, intracranial complications, extremely large sinuses (often with septal divisions), bone necrosis, severe orbital complications, and unsuccessful intra-nasal operations the radical procedure is the only method of treatment.

By the radical operation the author means the Killian procedure or one of its many slight modifications. By this method of approach it is possible to visualize the entire field of operation and to determine the contents of the sinus. Lewis has little faith in the intranasal method, even as a valuable cases.

This article is based on a series of forty cases. A considerable number of them are reported in detail.

Emphasis is placed on the importance of the post-operative treatment and the correction of any marked deformity which may be present after the operation. A. R. HOLLAND, M.D.

Skiffern, R. H. The End-Results of Radical Operations on the Accessory Sinuses. *Ann. Otol. Rhinol. & Laryngol.* 9 3, XXXI, 30

By radical operation is meant an operation performed with the single purpose of giving absolute relief from symptoms with a more or less perfect cure, regardless of the severity or extent of the surgical procedure.

The sequelae of radical operations on the frontal sinuses may be: (1) persistence of pain, (2) head-aches, (3) tenderness of the brow and scalp, (4) persistence of discharge, (5) neuralgia about the nostril, (6) diplopia, or (7) epiphora.

Radical operations on the maxillary sinus are seldom followed by unpleasant after-effects. Such after-effects are: (1) anesthesia of the upper lip and teeth on the side operated upon, (2) permanent fistula into the mouth, (3) excessive dryness of the nose on the affected side, and (4) the gradual return of the discharge after an apparent cure.

Important sequelae in the sphenoid sinus are: (1) gradual closure of the opening before the supuration has ceased and (2) re-infection with intermittent suppuration.

Radical operations on the ethmoid labyrinth may be followed by: (1) the continuance of the discharge, (2) the continuance of the pain, (3) partial occlusion of the nostril, or (4) ocular symptoms which were not present previous to the operation.

The author believes that in cases of disease of the ethmoid labyrinth it is best not to try to effect a cure in one operation, and that the middle turbinate should be removed in a preliminary operation to allow better aeration and drainage and a more careful study of the labyrinth. In conclusion he states that we should remember that experience has taught that radical operations upon the accessory sinuses do not always mean radical cures.

W. B. STARR, M.D.

MOUTH

Willcox, W., Goadby, K. H., ter W., Hearn, W. and Others. A Discussion on Dental Sepais an Etiological Factor in Disease of Other Organs. *Proc R Soc Med Lond* 1917 Sect Odont 7.

The extraction of teeth without proper indications is not strongly condemned. On the other hand, the preservation of teeth which are foci of infection leads to impairment of health and disease of other organs.

The organisms commonly found in dental infections are staphylococci and streptococci. The streptococci are usually classified in three groups: the hemolytic group, the viridans group, and the nonfermenting group.

Dental sepsis may be secondary to some other disease or toxemia. An excellent illustration of this is scurvy in which marked dental sepsis is one of the earliest symptoms and diet rich in antiscorbutic vitamins leads to rapid improvement and perhaps to the disappearance of the dental sepsis.

In infections of the teeth and gums the focus of infection should be removed by extraction or suitable treatment. It should be remembered also that very frequently intestinal infection results from dental infection and that this may require treatment by such methods as irrigation of the colon or the use of a togenousaccine.

JAMES C. BRADSHAW, M.D.

Peterson, H. J. A Note on the Operative Treatment of Malignant Disease, with Special Reference to the Tongue. *Lancet* 1917, 1, 1017-18.

A malignant growth spreads peripherally by invasion of the surrounding tissues and distally by permeation of the lymphatic system. In many cases in which an incomplete resection is done and invaded lymph glands were left, the patient lived for ten to fifteen years and in some apparent recovery resulted. The lymph system is the body's defense against the spread of the disease and to a limited extent is able to deal with these cells.

If the surgeon were certain to remove the entire growth without leaving any cells it would be correct to remove all lymph glands involved, but when these glands are gone, any cancer cells remaining in the wound will find their way to more distant glands beyond the reach of surgery. If the glands draining the field are left to act as scavengers, they may arrest the spread of any cells remaining in the wound and may then be removed before any cells within them can spread to more distant regions.

The author's method consists in the removal of the growth with cautery followed by a secondary dissection of the glands from three to four weeks later. He reports five cases of carcinoma of the tongue treated in this manner. Four of the patients are alive and free from recurrence after periods of seven years. The fifth cannot be traced.

WILLIAM J. PICKETT, M.D.

Muir, V. P. Ranula. *J Surg* 1917, 1, 1017-18.

Two types of mucoid cysts occur in and about the floor of the mouth.

Relatively small, rare cysts which originate from mucous or submucous glands lie in or just under the mucosa of the floor of the mouth or under the surface of the tongue and tend to protrude into the mouth. Complete removal of these is a simple procedure.

The more common type of ranula which lies in the floor under the mucosa and submucous tissues and burrows so that the amount discernible within the mouth does not indicate the true extent of the condition. Complete removal may be difficult or surgically impracticable.

Thompson does not accept the commonly held view that the cause of ranula is an obstruction cyst of the sublingual gland. Obstruction of the submandibular duct or dilation of Fleischmann's bursa seems still more unreasonable as an explanation. He believes with Thompson that deep ranula and related cysts have their origin in migrated portions of the cervical sinus. This hypothesis will explain all hitherto observed types, such for example, as that which extends up to the base of the skull as a para-facial cyst and others that extend an indefinite distance to the neck or submental region.

Thompson calls attention to the impracticability of removing the parafacial extension of the cyst when it is closely adherent to the base of the skull and the distal process. Simple incision and cauterization seldom cure. To avoid excision, Thompson recommends triangular incision and suturing of the triangular flap into the bursa to form a permanent drainage fistula. Blair suggests using a quadrilateral flap from the mucosa of the cheek to establish permanent drainage from an unremovable portion of parafacial extension cyst.

WALTER C. BLAIR, M.D.

THROAT

Shyne, W. S. Surgical Diathermy in the Treatment of Malignant Disease of the Throat. *Chirurgical Society of Glasgow* 1917, 1, 1017-18.

The author reports the results in sixteen cases of malignant disease of the throat treated in the past five years by surgical diathermy. Six of these cases are presented at the meeting of the Royal Medical-Chirurgical Society of Glasgow. Of these six, four are referred to as inoperable and two were early cases of epithelioma of the tonsil and fauces. In one of the four inoperable cases, with malignant growth involving the upper and lower jaw, the angle between the fauces, the tongue, and the side of the pharynx, there was a large glandular swelling in the anterior triangle. The primary growth was removed by surgical diathermy in June 1917. In February 1921, the glandular enlargement had decreased to the size of a small egg. It was then removed. Microscopic examination showed very good attempt to cure. Most of the gland had

become converted into dense fibrous tissue which was crowding upon the few cell rests which remained. In two cases operated upon nine and eight months previously there has been no recurrence to date. The others were operated upon four and five weeks previously.

In several cases in which cure was out of the question great relief was obtained by the use of diathermy.

The author remarks particularly on the absence of shock and severe pain following operation and the rapid recovery even after the removal of extensive growths.

SEYMOUR L. KOCZ, M.D.

New G. B. Laryngeal Paralysis Associated with the Jugular Foramen Syndrome and Other Syndromes. *Am J M Sc* 923, div 77

The author reviews the literature on complete unilateral paralysis of the recurrent laryngeal nerve associated with the jugular foramen syndrome and other syndromes, and reports seven cases observed in the May Clinic. He points out that there is difference in the nomenclature for the internal branch of the eleventh nerve, which in the United States is classified as part of the tenth nerve, and gives a table showing the effects of paralysis of the last four cranial nerves, according to Vermet and Oppenheim.

The author's first case was a case of paralysis of the right tenth, eleventh, and eleventh cranial nerves due probably to a neoplasm in the region of the jugular foramen. In the second case, the right third, fourth, fifth, sixth, seventh, ninth, tenth, eleventh and twelfth nerves were affected because of the extension of an epibuloma in the region of the jugular foramen and possibly an intracranial extension. In the third case, the last four cranial nerves and the cervical sympathetic nerve were affected by what was probably lymphosarcoma of the right side of the nasopharynx and the pharynx. In the fourth case the ninth, tenth, eleventh, and twelfth cranial nerves were affected by an extension of a mixed cell carcinoma of the parotid region to the jugular foramen region. In the fifth case, the ninth, tenth, and eleventh nerves were affected by mixed tumor in the region of the jugular foramen, and it seemed possible that the cervical sympathetic was partially involved. In the sixth case the third, fourth, fifth, sixth, ninth, tenth, and eleventh cranial nerves, and probably the cervical sympathetics, were involved by a rapidly growing nasopharyngeal tumor which was probably lymphosarcoma. Deafness on the right side as due probably to encroachment on the cochlearian base. The seventh case appeared to be a mixed tumor of the jugular foramen region involving the last four cranial nerves on the right side.

In the discussion the author points out that in six of the seven cases in the series there was complete unilateral laryngeal paralysis with the affected vocal cord in the intermediate or cadaveric position rather than in the midline position usually taken by it

after an injury to the recurrent laryngeal nerve. In some of the cases the involvement of the cranial nerves was very extensive, probably because of extensions of the growth (which may or may not have been primary in the nasopharynx) into the orbit, intracranially, and into the region of the jugular foramen. The lesion in all the cases, with possibly one exception, was a neoplasm in the region of the jugular foramen originating in the pharynx or nasopharynx. Four of the tumors were of slow growth and two of rapid growth, and the duration of symptoms ranged from six weeks to twenty years. Pathologically, carcinomas of the mixed-cell type, basal cell epibulomas, and lymphosarcomas are represented.

The ages of the patients ranged from 35 to 65 years. The sexes were affected about equally.

It was noted that patients with paralysis of half of the tongue had trouble in swallowing liquids, in those with paralysis of the palate, food became lodged back of the nose, and those with paralysis of the pharynx had difficulty in swallowing solids. Cardiac and respiratory disturbances occurred in only two cases. Myositis and narrowing of the palpebral fissure occurred in four cases because of involvement of the cervical sympathetics.

Moore, I. Operative Procedures in the Treatment of Stenosis of the Larynx Caused by Bilateral Paralysis of the Abductor Muscles, with Special Reference to a New Method by Means of Which It Is Suggested that the Alveary May Be Permanently Enlarged and the Patient Decannulated. *Proc Roy Soc Med Lond*, 913, 11. Sect Laryngol 3.

After reviewing the various operative procedures used in the treatment of stenosis of the larynx caused by bilateral paralysis of the abductor muscles, Moore describes a new method—anterolateral transection of the vocal cord—which he calls cordectomy.

The latter procedure, as proposed by Trotter who suggested making an incision transversely across the middle of the thyroid cartilage, inserting a retractor, obtaining a good view of the anterior insertion of the cords, separating from the thyroid ala by circular incision the portion of cartilage to which they are attached, and drawing the latter forward and laterally along the transverse incision through the thyroid ala.

Working on the cadaver Moore found that the approach to the larynx by a transverse incision is not satisfactory because it is impossible to locate accurately the anterior insertions of the cords from the exterior of the larynx and avoid cutting them.

Moore suggests performing thyroplasty, excising a triangular piece of cartilage (along with the attached cord) elevating the perichondrium in the vicinity of the released cord, and drawing the piece of cartilage with the attached cord along a horizontal incision and anchoring it after punching out a circular piece of cartilage in which the cord can lie.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS; AND CRANIAL NERVES

Geneseth, F. The Mechanical Processes in Concussion and Contusion of the Brain (Die mechanischen Vorgänge bei der Gehirnerschütterung und der Gehirnerschütterung). *Beitr. H. Chir.* 9 3, CIVIL, 348

On the assumption that the brain reacts to mechanical influences like a fluid, many writers attempt to explain cerebral concussion and contusion by hydrostatic and hydrodynamic law. According to Geneseth many circumstances and observations speak against this conception. In every case of bullet wound of the brain one is struck by the disproportion between the caliber of the bullet track and that of the shot, the former being much greater than the latter. In a through and through bullet wound of the brain, the immediate primary track, corresponding to the caliber of the bullet, is surrounded by a more or less extensive zone of necrotic brain substance the secondary track. The lumen of this secondary track is variable. This necrosis around the primary track is due to the fact that the entire mass of brain tissue corresponding to the primary bullet track is pressed by the force of the shot into the surrounding tissue, the continuity of the latter being thereby ruptured. If the speed of the bullet decreases within the brain the diameter of the necrotic zone becomes correspondingly narrower. This is why the diameter of the secondary bullet tract is always distinctly less toward the end of the track. From these facts Geneseth concludes that the brain is compressible but that for its compression great force is necessary so that it does not favor the transmission of mechanical energy.

In study of dull injuries of the skull not causing fracture Geneseth always found necrosis which, beginning at the site of the blow extended with varying thickness through the entire diameter of the brain and in direct continuation of the trajectory. The same finding was made also in depressed fractures and penetrating wounds of the skull. A compressible slightly elastic body which conducts the waves of force in only one direction is to be regarded as a solid body rather than as a fluid. From this viewpoint it is easy to explain the not infrequent observation that in dull injuries of the skull the large cortical areas are injured, those just opposite the point of application of the force as well as those next to it (contrecoup).

Cerebral concussion is due usually to the effect of sudden blow, the force of which travels through the brain in a straight line and in only one direction. This explains why the entire brain is never affected

by the trauma, and loss of consciousness, the symptom which could best be explained by the theory that the brain is a fluid, occurs only if the waves of force arising from the trauma pass through the center of consciousness.

In conclusion the author discusses briefly the pathologico-anatomical findings in concussion of the brain and comes to the view that a definite pathologic finding represents only the end of the pathologic process initiated by the trauma. Every application of force to the brain is followed by injury to the nerve cells in a definite manner and direction, which requires certain time for its development and its macroscopic demonstration. Therefore it follows that a negative pathologic finding in a case of brain injury with distinct symptoms of concussion means nothing and that even macroscopic extravasation of blood is not presumptive evidence of traumatic brain disturbance. However it may be said with practical certainty that the basis of all disturbances caused by trauma is change in the nerve cells. This holds true also for concussion of the brain, which is nothing more than the result of force. The factors responsible for contusion and concussion of the brain are the same. According to the pathologic findings the difference is only difference of degree. cerebral hemorrhage means heavier blow.

Boxer (2)

Ritter, A. Brain Injuries with Predominating General Symptoms. Their Late and Persisting Results (Die Gehirnerkrankungen mit Vordominieren der Allgemeinsymptome ihre Spät und Dauerfolgen). *Deutsche Zeitschr. f. Chir.* 9 3, CIVIL

In a study of the large accident material of the Zurich clinic so far as it related to lesions of the head, the author found that those cases designated as concussion of the brain made up a very high percentage of head injuries and still higher percentage of brain injuries. Of the 1,000 accident cases treated during the last twenty years, 388 (38.8 per cent) showed lesions of the head, and in 740 (53 per cent) of the latter there was a lesion of the brain, while in 45 the condition was diagnosed as uncomplicated concussion.

Ritter classifies cases of concussion of the brain into three types, viz. concussion of the medulla oblongata, concussion of the brain in the strict sense of the term and contusion of the brain.

Concussion of the medulla oblongata is characterized by loss of consciousness, respiratory and circulatory disturbances, vomiting, and changes in the blood pressure. All these symptoms are transitory attain their climax immediately after the accident and then steadily decrease. Phenomena which appear later or persist are indicative of severe organic

without hyperthyroidism which are included in the computation.

In computing the mortality rate all deaths which occur in the hospital, without regard to the cause of death or the length of time after operation should be credited to surgery.

The danger of reactions following surgical procedures can be reduced to the minimum by preliminary treatment and painstaking care in the management.

The mortality of the surgery of exophthalmic goiter is highest among patients with visceral degenerative changes. The operative risk is less and the benefits derived are greatest when the patient comes to operation early in the course of the disease before degenerative changes have occurred.

The prevention of operative and postoperative complications by painstaking care in the details of the management of surgical cases is essential for a low mortality rate.

Strauch, B. Tumors of the Parathyroid Glands and Their Relation to Osteomalacia (Ueber Epithelkörperchen-Tumoren und ihre Beziehungen zu den osteomalacischen Knochenerkrankungen). Frankfurt Zeitsch f Path 9 xxviii, 39

This article is based upon the postmortem findings in the case of a woman 27 years old who showed an enlargement of the left side of the neck and died of a severe typical postperatal osteomalacia. The tumor in the neck proved to be a tumor of the parathyroid glands measuring 4.5 by 3 by 3.5 cm. which was well encapsulated and presented a finely nodular surface. The associated half of the thyroid gland was the size of walnut. Softening of bone was particularly marked in the skull, thorax, and pelvis. About one-third of the parathyroid tumor consisted of tissue rich in gland cells, while half of the remaining two-thirds contained loose connective-tissue strands in which gland cells and nests were

irregularly strewn. In the part rich in gland cells the parenchyma elements were chiefly pale rose colored mother cells, some of which formed vesicles filled with colloid substance. Here and there were eosinophile cells, generally in groups of from thirty to forty. In the sections poor in gland cells, the mother cells alone were focal, and are paler as the periphery was approached. The halves of the thyroid gland showed certain signs of atrophy as the other endocrine glands there were no changes.

The three other parathyroids were not to be found therefore the tumor must be regarded as an overgrowth from excessive functional demands as this is in conformity with the histologic findings which showed all the constituents of the normal parathyroid. The growth was the result, rather than the cause, of a disturbance in the calcium metabolism. In contradistinction to this, the true adenoma of the parathyroid glands is composed of cellular elements of one type only either mother cells or eosinophiles. Therefore enlargements of the parathyroids accompanied by bone disease are described as hyperplastic tumors, while those about this tendency are described as dysontogenetic (Sch albe) tumors. The hyperplastic tumor formations without alteration in the bones which are described in the literature, the author designates as parathyroidomas. He points out that in these cases no particular examination as made of the bony system.

Tumors of the parathyroid glands throw very little light on the etiology of bone softening, but constitute further proof of the relationship of the parathyroids to calcium metabolism. Whether the parathyroids neutralize the calcium destroying acid, whether a decomposing action of other glands or internal secretion is counteracted by hyperplastic proliferation, and whether the kidneys have part in the disease picture through increased calcium secretion are questions which still remain unanswered.

BUCK (2)

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS; AND CRANIAL NERVES

Genewein, F. The Mechanical Processes in Concussion and Contusion of the Brain (*Die mechanischen Vorgänge bei der Gehirnerschütterung und der Gehirnerschütterung*). *Beitr. H. Chir.* 9, 2, 1911, 345

On the assumption that the brain reacts to mechanical influences like fluid, many writers attempt to explain cerebral concussion and contusion by hydrostatic and hydrodynamic law. According to Genewein many circumstances and observations speak against this conception. In every case of bullet wound of the brain one is struck by the disproportion between the caliber of the bullet track and that of the shot, the former being much greater than the latter. In through and through bullet wound of the brain the immediate primary track, corresponding to the caliber of the bullet, is surrounded by more or less extensive zones of necrotic brain substance. The secondary track. The lumen of this secondary track is variable. This necrosis around the primary track is due to the fact that the entire mass of brain tissue corresponding to the primary bullet track is pressed by the force of the shot into the surrounding tissue, the continuity of the latter being thereby ruptured. If the speed of the bullet decreases, then the brain the diameter of the necrotic zone becomes correspondingly narrower. This is why the diameter of the secondary bullet tract is always distinctly less toward the end of the track. From these facts Genewein concludes that the brain is compressible but that for its compression great force is necessary also that it does not favor the transmission of mechanical energy.

In study of dull injuries of the skull not causing fracture Genewein also found necrosis which, beginning at the site of the blow extended with varying thickness through the entire diameter of the brain and in direct continuation of the trajectory. The same finding was made also in depressed fractures and penetrating wounds of the skull. A compressible, slightly elastic body which conducts the waves of force in only one direction is to be classified as solid body rather than as fluid. From this viewpoint it is easy to explain the not infrequent observation that in dull injuries of the skull the large cortical areas are injured, those lying opposite the point of application of the force as well as those next to it (contre coup).

Cerebral concussion is due usually to the effect of sudden blow the force of which travels through the brain in straight line and in only one direction. This explains why the entire brain is never affected

by the trauma, and loss of consciousness, the symptom which could best be explained by the theory that the brain is fluid, occurs only if the waves of force arising from the trauma pass through the center of consciousness.

In conclusion the author discusses briefly the pathologic anatomical findings in concussion of the brain and comes to the view that definite pathologic finding represents only the end of the pathologic process initiated by the trauma. Every application of force to the brain is followed by injury to the nerve cells in definite manner and direction, which requires a certain time for its development and its macroscopic demonstration. Therefore it follows that negative pathologic finding in a case of brain injury is a distinct symptom of concussion means nothing and that even macroscopic extravasation of blood is not presumptive evidence of traumatic brain disturbance. However it may be said with practical certainty that the basis of all disturbances caused by trauma is change in the nerve cells. This holds true also for concussion of the brain, which is nothing more than the result of force. The factors responsible for contusion and concussion of the brain are the same. According to the pathologic findings the difference is only a difference of degree. cerebral hemorrhage means heavier blow.

BOOK (2)

Ritter, A. Brain Injuries with Predominating General Symptoms. Their Late and Fereleling Results (*Die Gehirnerschütterungen mit Vorherrschenden der Allgemeinsymptome ihre Spät und Dauer folgen*). *Deutsche Zeitschr. f. Chir.* 9, 1911

In a study of the large accident material of the Zurich clinic so far as it related to lesions of the head, the author found that those cases designated as concussion of the brain made up a very high percentage of head injuries and a still higher percentage of brain injuries. In the 1,000 accident cases treated during the last twenty years, 2,355 (12 per cent) showed lesions of the head, and in 740 (33 per cent) of the latter there was a lesion of the brain, while in 35 the condition was diagnosed as uncomplicated concussion.

Ritter classifies cases of concussion of the brain into three types, viz. concussion of the medulla oblongata, concussion of the brain in the strict sense of the term and contusion of the brain.

Concussion of the medulla oblongata is characterized by loss of consciousness, respiratory and circulatory disturbances, vomiting, and changes in the blood pressure. All these symptoms are transitory attain their climax immediately after the accident, and then steadily decrease. Phenomena which appear later or persist are indicative of severe organic

changes. Characteristic of the condition is defective memory regarding the accident. This was present in 93 per cent of the cases reviewed.

Experimental research (Bresnauer, Rahm) refers all symptoms to pressure on the medulla oblongata caused, in most cases, by blow on the forehead or occiput. A relatively slight trauma may cause death through simple pressure on the medulla, especially on the respiratory center. In uncomplicated concussion of the medulla oblongata the pathologico-anatomical findings are entirely negative.

In 65 per cent of the cases reviewed none of the symptoms persisted. In the others, the average duration of symptoms was from three to six months. The prognosis is therefore favorable.

Concussion of the brain in the strict sense of the term is characterized by *crigo*, staggering gait, headache, depression, etc. Unconsciousness is not a sequela in third of the cases, but in some it occurs immediately and is very deep. In general, the entire picture is less uniform than that of a concussion of the medulla oblongata and the disappearance of the phenomena is slower. As a rule the concussion is caused by extensive, though not very severe, violence on the lateral parts of the cranium.

The pathologico-anatomical findings are artificially induced concussion: swelling of the cell bodies, dust like homogeneity of the chromaffin outline or breaking down of the cell, and detritus with the formation of very small scattered islands of necrosis. Every concussion is therefore based on organic changes. The symptoms were found to persist on an average for nineteen and five-tenths months, decidedly longer than those of concussion of the medulla oblongata, but finally disappeared entirely.

Contusion of the brain is more severe than concussion of the brain. It is characterized by distinct focal symptoms, irritative and paralytic phenomena of motor and sensory zones, and disturbances in various senses. The multiplicity of the symptoms points to diffuse change in the brain. Unconsciousness continues longer and the pulse and respiration become sympathetically involved. Contusion results usually from severe violence on the lateral parts, particularly in the temporal and parietal regions. Pathologico-anatomical examination reveals clearly recognizable capillary apoplexies, cell degeneration and detritus. The duration of the symptoms is considerably longer than that of concussion of the brain, averaging four and eight tenths years.

The treatment in each of these three conditions differs only in degree. As the minimum, three weeks in bed is advised, since long-continued headache and persistent symptoms of considerable severity often result if the patient is allowed to get up too early. For from four to six weeks after this rest in bed the patient should not be allowed to exert himself very much, and during this time various functional methods of treatment may be employed.

BAUER (2)

Gotch, O. H. Traumatic Paraplegia: Observations on Cases with Reference to Treatment and Prognosis. *Br J J* 1923 4, 340

The author reports fifty six cases of traumatic paraplegia sustained in the World War all uncomplicated by other disease processes. Thirty one were of the complete lesion type from the fourth to the tenth dorsal segments, and seventeen of the incomplete lesion type from the eighth dorsal to the fifth lumbar segments. Both the complete and incomplete types may be subdivided into the flaccid or spastic varieties.

Particular attention is called to certain special symptoms of the complete type.

Pain in the lower extremities is often very severe requiring opiates for its control, and may be accompanied by an elevation of temperature up to degrees F.

Flatulence is common and is occasionally painful. It is associated with ladder-like peristalsis, extreme distention, and the expulsion of gas through the mouth and anus, it may become very toxic and is usually relieved by pituitrin given hypodermatically or by drenching given in enemas.

Renal colic is common and sometimes bilateral. Tumor mass is present in the loin and the colic followed by the passage of blood stained purulent urine. Autopsy has shown enormously dilated pelvis filled with pus and calculi.

Chronic urogenital sepsis is found in all cases with complete paralysis of micturition. It is evidenced by albuminuria, pyuria, and the presence of renal and vascular epithelium in the urine. As acute febrile exacerbation may develop suddenly and be followed by pyonephrosis, prostatitis, orchitis or epididymitis.

Manifestations of anemia constitute the last stage in these cases. They are of gradual or sudden onset without renal edema or albuminuria returning. On postmortem examination the kidneys are found to be replaced by fat resembling an irregular bacoon in size with fibrous walls which is filled with calculi and pus. The ureters are thickened.

Bedsore may be either wet or dry in type and extremely resistant to treatment.

The treatment should include (1) continued and skilful nursing, (2) daily massage of the paralytic muscles, (3) the establishment of adequate bladder drainage preferably by the suprapubic method, the wound being kept open, and (4) the encouragement of mental confidence, mental occupation and allowing the patient to be up in bed chair as much as possible.

P. R. BULLOCK, M.D.

Fuchs, A. The Fat of Those Suffering Head Injuries (Die Schädelschneide Kopfverletzungen). *Wien med Wochenschr* 94, 1920, 1069.

The author bases his article on 3,731 injuries of the head.

One of the most frequent complaints of persons with such injuries is of headache and vertigo. The headache arises from simple neurovascular pressure

to decided migraine. The vertigo varies from attacks of true disturbance of equilibrium independent of headache and general disturbances to attacks of decidedly epileptic type. Headache and vertigo are naturally very often associated. The objective symptoms are slight. Differences in the pupils and symptoms of damage to the labyrinth are noted. The difference between the pupils is frequently transitory and disappears with the passing of the headache and attacks of vertigo. Changes in the pulse and the true vomiting of cerebral character are rare. Increased pressure can often be demonstrated roentgenologically. There is no fixed relation between the severity of the original injury to the head and the frequency and intensity of the attacks of migraine and vertigo. Persons with large cranial defects suffer less under such attacks than those with small or no bony defects. The skull is seldom sensitive to percussion, but frequently is sensitive to pressure on the scar.

In the treatment of severe attacks of migraine lumbar puncture is useless. The treatment can be only symptomatic with emphasis on dietetic and hygienic measures. The loss in efficiency is difficult to estimate. It is especially the morbid fear of vertigo that frequently prevents the resumption of the former occupation.

The author lists various occupations with the complaints of the injured relating to each. The most frequent complaints are of lifting, carrying burdens, bending, bent climbing ladders, the noise of workshops, a bent over attitude to work and uncertainty in steering. The most frequent causes of temporary interruption of work are headache, vertigo and convulsions.

Loss of cerebral function of the motor type comes under the clinical type of hemiparesis and paraplegia or paresis. As a rule motility is restored more easily in the lower extremities than in the upper and recovery from a disturbance of the sense of position occurs readily. Persisting spasms always present great difficulties. No more can be accomplished therapeutically than in sensory paralysis. Loss of function of cortical areas does not improve with time. However injured persons who are intellectual learn to be less disturbed by it.

One of the most distressing complications of injury to the head is traumatic epilepsy. No clear relation can be made out between it and the severity, site, or type of the external injury. It seems, however, that injured persons on whom débridement is performed immediately after the trauma and those who have large defects suffer from epileptic attacks less often than the others. In favorable cases surgery is successful in others the treatment indicated is the administration of bromides and the prohibition of alcohol. Lat. abscesses developed in only four tenths of the cases reviewed. Psychic disturbances,

such as frequent, are evidenced by fluctuating moods, irritability, quick exhaustion, intolerance of heat and alcohol, headaches and vertigo. Paradoxical conductances were rare.

TARVER (2)

Dowman, C. E. The Treatment of Brain Abscesses by the Induction of Protective Adhesions Between the Brain Cortex and the Dura Before the Establishment of Drainage. *Arch Surg* 9 3, 4747

The author suggests that after brain abscess has been located by exploratory puncture a very small silastic drain be inserted along the needle track down to but not into, the abscess cavity in order to stimulate the formation of protecting adhesions between the cortex and dura. After a few days the drain should be pushed into the abscess cavity. Later similar rubber wicks should be added, and within a week or ten days a tube substituted for the rubber-thermo drains. SCHWENK L. KOCHE MD

Fay T. The Administration of Hypertonic Salt Solutions for the Relief of Intracranial Pressure. *J Am Uro* 121 9 3 1913 1415

Hypertonic salt solutions, acting as dehydrating agents, cause the rapid reduction of intracranial tension. The administration of magnesium sulphate solution (1/4 oz. of crystals in 8 oz. of water by mouth or 3 oz. of crystals in 6 oz. of water by rectum) gives marked relief from the symptoms of intracranial pressure and medullary edema and helps to elicit symptoms otherwise masked by the pressure. The symptoms it relieves include headache, vomiting, choked disk, medullary depression and coma. Its effects become apparent in about an hour after its rectal administration and somewhat earlier after its oral administration. The dose may be repeated every four hours until the desired dehydration has been obtained. A larger volume than 6 oz. given by rectum may be expelled. The addition of 4 ccm of camphorated tincture of opium may help the patient to retain the salt solution. Accumulated fluid may be syphoned off from time to time. The fluid intake should be restricted to the minimum.

The routine administration of magnesium sulphate solution two hours before operation in cases with increased tension is of great value and permits the exposure of the cortex which in the presence of decided pressure, would be unsafe. It also checks the rapid advance of papilloedema and relieves the coma and respiratory depression in cases of marked intracranial pressure. In postoperative stupor following intracranial exploration, with a marked fall in the respiration and pulse rate, the rapid dehydration checks the pressure on the basal centers and allows the respiration and pulse to return to normal. In cases of traumatic head injuries, in which the pulse and respiration fall below normal, its use is so effective that it renders surgical intervention unnecessary. Rapid dehydration of other fluid collections in the body such as edema of the lungs may also be accomplished.

Thompson has suggested the use of magnesium sulphate solution in glaucoma. De Schweinitz and Baer have noted an appreciable reduction of intraocular tension following its administration. Ravdin

controlled with it an edema of the glottis following Ludwig's angina.

The intravenous injection of sodium chloride solution is of value in cases in which rapid reduction of intracranial pressure and volume is necessary on the operating table. The intravenous injection of from 50 to 120 c cm of a 15 per cent sodium chloride solution during a period of twenty minutes is an important adjunct in exploratory craniotomy, especially when the dura is tightly distended and ventricular puncture is unsatisfactory or impossible. Although 30 c cm of a 55 per cent sodium chloride solution has been used, larger quantities of a 15 per cent solution yield a greater reduction of pressure in a shorter period of time.

Aluminum sulphate is non-dialyzable and produces its effect through rapid dehydration of the blood plasma solely through the intestinal walls with compensatory absorption on the part of the blood from the fluid spaces, especially the ventricular system, to maintain normal blood volume. On the other hand, hypertonic sodium chloride solution is dialyzable and the increased chloride content of the blood leads to a temporary, secondary tissue retention with a rapid return of pressure symptoms a few hours after its administration.

WALTER C BURDET M D

Wolffstein, M., and Bartlett, F H. Brain Tumors in Young Children. A Clinical and Pathological Study. *Am J Dis Child* 92, 227-57.

The results of a study of seven of nine cases of brain tumor found in 4,000 autopsies upon children are reported. Five of the neoplasms are located in the cerebellum and two in the cerebrum. All of the tumors were glomatous. In the five cases of intracranial tumor the cerebellar vermis was involved.

In the diagnosis of brain tumor in children there are two problems: first the growing brain and skull may delay the appearance of objective evidence of increased intracranial pressure and, second, the patient is not old enough to complain of subjective feelings. The first factor seems to explain the infrequency of vomiting and convulsions in the series of cases reviewed. These presented secondary hydrocephalus. Examination of the spinal fluid was negative.

LOUIS E D VII, M D

Penfield, W G. Cranial and Intracranial Endotheliomata. *Surg Gynec & Obst* 92, 227-57.

Dural endotheliomata give evidence of their presence by the development of a typical, slowly growing hard bony tumor on the cranium. Their nature is not entirely understood.

The microscopic picture is that of the so-called endotheliomata of the dura, their nuclei being frequently arranged in whorls. They arise from the arachnoid or inner layer of the dura and displace without infiltrating the brain. They pass through the dura in number of places, enter the overlying

bone and cause a complete rearrangement of the osseous structure. In some cases the temporal muscle and scalp may be infiltrated by the neoplasm.

In 450 cases of brain tumor proved at operation or autopsy the condition was associated with a lump on the cranium in ten. These ten cases presented similar pathologic pictures and clinical histories.

The characteristic tumor with stabling papilloma beneath it is pathognomonic of the condition. Operative treatment is the only method of dealing with these growths. They should be removed as early as possible. This treatment should give satisfactory results if the operation is survived.

A history of trauma is not always obtained, but the tumors are more common in men than in women, a fact suggesting trauma as a cause.

The author reviews the literature and nine cases of this type of tumor. MACELE H HOSCHKE M D

D'Almeida, O. A Further Report on Cerebral Tumors (Ultimorum contributio ad tumores cerebrales). *Patologia* 9, 3, 222-223 med. 1907.

D'Almeida has already published the clinical and anatomopathologic findings in twenty cases of cerebral tumors observed from 1889 to 1905. In this article he gives the histories of ten others. The latter may be divided into two groups: those with single tumor and those with multiple tumors. The first group included cases of fronto-parietal sarcoma, sarcoma of the left frontal lobe with involvement of the right solitary tubercle in the left side of the cerebellum, and hematomata of the dura mater corresponding to the left Rolandic area. The second group included cases of tuberculous tumors of the floor of the fourth ventricle and of the right cerebellar hemisphere, multiple disseminated cerebro-dural sarcomata, sarcoma of the right semi-oval center and of the occipital lobes secondary to a latent supratentorial sarcoma, multiple tuberculous tumors of the motor centers, and tuberculous tumors in the left semi-oval center.

D'Almeida concludes that, even in cases of multiple intracranial tumors it is sometimes possible to determine the situation of the growths if all the symptoms are studied with regard to their appearance and progressive development.

The treatment of most intracranial tumors is chiefly surgical. Definite recoveries, however, are rare. The treatment of syphilitic tumors remains almost exclusively medical, and such treatment is almost always successful. W. A. BARNES

Denk, W. The Value of Pneumoventriculography (Encéphalography) in Brain Diagnosis. (Die Bedeutung der Pneumoventriculographie (Encéphalographie) bei der Hirndiagnostik.) *Mitteil d. Gesellsch d. Med. Chir* 92, 227-57.

The author reports his experience in the 117 of the ventricles of the central nervous system thirty cases.

When oxygen is used air embolus is prevented with certainty as this gas never causes embolism even when it is given by intravenous injection. Denk employs a small apparatus which is shown in an illustration. For the localization of a brain tumor he recommends direct ventricle puncture in the lateral position, with the face turned to the left so that the right anterior cornu, which is the one punctured as a rule is lowest down. With local anesthesia a small hole is drilled 1 cm. to the right of the bregma. Before the injection is made the syringe plunger is drawn back somewhat so that the oxygen will not be injected into the brain substance. The amount of oxygen used varies from 15 to 370 ccm.

Direct filling of the ventricles causes no reaction worth mentioning, but when lumbar filling is done the patient immediately experiences nausea, vomiting, and headache. Later whichever method is used, the temperature rises for several days and the patient complains of dull headache.

Death occurred in two of the thoracic cases he had not succeeded in injecting the oxygen. In both of these cases there was a large brain tumor. The deaths are to be attributed, not to the method, but perhaps to technical error (pressure variations caused by the lumbar puncture). Therefore conservatism is necessary in the use of lumbar puncture.

Ventriculography is not harmless, and is justified only when clinical diagnostic methods do not give an exact diagnosis. Transillumination is not sufficient as a rule. Exposures should be made in four positions. In the occipital position the oxygen rises into the anterior cornu, which then becomes plainly visible. In the frontal position it rises into the posterior cornu, and in the lateral position into the opposite ventricle.

In communicating hydrocephalus (three cases) the ventricles may be filled from the spinal canal, but the subarachnoid space cannot be filled from either the ventricles or the lumbar canal. In case of unilateral filling of the ventricles the gas must be disseminated evenly by changing the patient's position. In obstructive hydrocephalus the ventricles cannot be filled from the spinal canal and the subarachnoid space cannot be filled by any route. In three of four cases, a tumor compressing the aqueduct or the fourth ventricle was found at autopsy. Whether it is possible by the method described to distinguish tumor hydrocephalus from the adhesion type is yet to be determined.

In cases of large brain tumor, ventriculography gives considerable information. Pressure on the ventricle on the same side changes in shape and position. This suggests but does not prove the presence of a tumor (exudate, hematoma). The shape and degree of deformity vary greatly. The localization of brain tumor will become much more certain through ventriculography and as a result a greater number of such tumors will be removed radically. The author's conclusions are as follows:

The method is not dangerous.

1. In cases of strong pressure on the brain, lumbar filling is contra-indicated.

2. Obstructive hydrocephalus indicates a tumor in the posterior or median fossa.

3. Large brain tumors cause a change in the shape and position of the lateral ventricles.

4. Conclusions should never be drawn from ventriculography alone; the clinical symptoms also must be considered.

5. Defects in filling should suggest first the possibility of faulty technique. SATSRUNK (Z).

Adson, A. W., and Ott, W. O. Preservation of the Facial Nerve in the Radical Treatment of Parotid Tumors. *Arch Surg* 93, 7, 739.

Complete removal of the parotid gland with the preservation of the facial nerve is indicated in certain cases of tumors of the parotid, especially those that have broken through the capsule or have recurred after local removal. In cases of small encapsulated tumors this procedure is usually not indicated. In cases in which metastases have taken place in the parotid gland or cervical lymph glands and involve the facial nerve it is exceedingly difficult to preserve the nerve.

Mixed tumors of the parotid constitute only a small percentage of malignant tumors of the body. In 1,607 patients who were examined at the Mayo Clinic there was only one. The growth of these tumors is slow. As long as they remain encapsulated they are not highly malignant, but when the capsule is ruptured by growth or an incomplete operation, invasion of the surrounding tissue soon takes place and the growth becomes highly malignant. According to Sistrunk, a permanent cure is obtained practically always in early cases by enucleation of the tumor. The importance of complete removal of the parotid gland is emphasized if there is a possibility that the tumor cannot be enucleated completely or if there is any evidence of an extension into the parotid gland. Radium is of some value in the treatment of these tumors, but does not compare in efficacy with surgical treatment.

The technique of the enucleation of small encapsulated tumors has been described by Sistrunk. The authors have found that it is possible to carry the dissection of the temporal and cervical portion of the seventh nerve through the parotid gland and to dissect the nerve away from the gland. An incision is made 3 cm. below the lower body of the mandible and running over the mastoid process, and the inframandibular branch of the seventh nerve is exposed. This is followed upward until the V of the seventh nerve is exposed. A vertical incision is then made from just below the zygoma, passing down 1 cm. in front of the ear and joining the first incision. Next, the cervical and temporal divisions of the seventh nerve are dissected through the lower lobe of the parotid gland. The facial nerve penetrates the lower lobe of the parotid for a distance of only about 3 cm., and then lies underneath the parotid on the muscles of the face. The dissection is next carried

forward sufficiently to elevate all of the parotid, and when this is completed, Stenson's duct is ligated and divided and the parotid gland is removed from the skin. If the skin is involved, the area may be removed with the malignant mass. The deep lobe of the parotid, which lies posterior and medial to the ramus of the mandible is removed by gently elevating the facial nerve outward and dissecting out the parotid gland which lies medial to it. The exposure obtained by this procedure facilitates complete removal of all parotid tissue with any involved skin without severing or injuring the facial nerve.

The facial nerve should be sacrificed only if metastases and necrosis have become so extensive that it is impossible to demonstrate the lines of cleavage.

Byrnes, C. M. An Examination of the Spinal Accessory Nerve from a Case of Bilateral Acquired Spasmodic Torticollis. *Bull Johns Hopkins Hosp* Balt 93 xxiv 3

The author reports a case of bilateral acquired spasmodic torticollis. The spasm was retrocolic and there was a rhythmical variation in the size of the neck which reached its maximum at noon each day. Two unidentified posterior cervical nerves, both spinal accessory nerves, and the sternomastoid, the trapezius, the splenius capitis, and the semispinalis muscles of both sides were sectioned.

Studies were made of all the muscles and accessory nerves. Cross sections of the left spinal accessory nerve stained with hemalum and acid fuchsin showed many faintly colored, swollen and cylinders of irregular outline with few healthy appearing axons and without proliferation of any other elements.

Longitudinal sections showed fragmentation and swelling of the axons with a slight increase in the neurolemmal nuclei. The Weigert stain showed complete absence of myelin. The right nerve was more nearly normal. The muscle preparations showed variation in the size and shape of the cells. Some were atrophic and others hypertrophic with longitudinal cleavage. In the splenius capitis many cells were dumbbell shaped, vacuolated, and undergoing general disintegration. P. R. BRIDGEMAN, M.D.

SPINAL CORD AND ITS COVERINGS

Eleberg, C. A. The Early Symptoms and the Diagnoses of Tumors of the Spinal Cord, With Remarks on the Surgical Treatment. *Am J M Sc* 93, clxxv 719

One of the most common early symptoms of spinal cord tumors is neuralgic pain due to irritation of the posterior roots. Instead of this neuralgic pain, many patients first complain of persistent pain in the back of the neck or in the thoracic space. Usually this is well localized and does not radiate until late in the course of the disease. Pain in the lumbar area which radiates down the backs of the legs is a common symptom of tumors of the lumbosacral segments of the cord or of the cauda equina. While spinal cord tumors may develop without pain, such tumors are usually small

and develop from the pia or arachnoid on the anterior, antero-lateral, or postero-lateral surface of the cord between the nerve roots. In cases of extradural and extradural growths the total absence of sensory disturbance is rare, but in cases of intramedullary growths this type of disturbance is common.

Spinal cord tumors are classified as posterior when they lie behind the posterior roots, as postero-lateral, when they lie between the posterior roots and the dentate ligament, as antero-lateral, when they lie between the anterior roots and the dentate ligament, and as anterior when they lie in front of the anterior roots. Posterior tumors are characterized by root pains and marked disturbances of muscle and joint sensation. Postero-lateral growths usually cause severe root pains and commonly Brown Séquard's syndrome. Growths upon the antero-lateral aspect of the cord frequently have a painless beginning with tingling in one or both lower limbs and late sensory disturbances. Anterior tumors frequently cause tingling in one or both lower extremities and late sensory disturbances.

The author believes that there is an arrangement of fibers within the various tracts of the cord which corresponds to the extremities and their various parts. Therefore every possible means should be used to localize spinal cord tumors most accurately.

JOYAL F. D. VII, M.D.

PERIPHERAL NERVES

Dietrich The End-Results of Nerve Suture in Gunshot Wounds of the War of 1914-1918 (Enderfolge von Nervennahten nach Schussverletzungen aus dem Kriege 1914-1918). *Med Abh* 923 xlii 37

Among 7,000 cases of war wounds there were forty-six cases of nerve injuries in which the severed nerve was sutured. The results have been very unsatisfactory. In only seven (5.7 per cent) has there been total restitution of conduction and in only three (6.5 per cent) light improvement. Good results were obtained only in cases of injury of the radial nerve. In two cases of median nerve injury and in one case of injury of the peroneal nerve there was improvement. In one case the radial nerve was split to bridge the defect. Good result was obtained.

One reason for failure is poor healing. Another factor of importance is the length of time that elapsed after the injury before the suturing was done. The successful sutures of the radial nerve were done from one and one half to nine months after the injury and those which were unsuccessful were done from three and one half to twelve months afterward. The suturing of the median nerve which was followed by improvement was done from one to two months after the injury and the unsuccessful suturing after from ten and one half to thirteen months. The level of the nerve injury is also of influence on the result. The best results were obtained in cases of injury in the middle of the nerve.

THOMAS (7)

SYMPATHETIC NERVES

Wojciechowski, A. Peri-Arterial Sympathectomy (Periarterielle Sympathotomie) *Polish gaz lek* 9 2, 1, 830

After a brief review of the literature the author reports the experiments in peri arterial sympathectomy which he performed on the femoral artery of rabbits. After seven, fourteen, twenty one, thirty, forty, fifty and seventy five days the part of the vessel operated upon was removed and examined under the microscope. The microscopic examination is rather difficult and very frequently leads to incorrect conclusions.

No signs of degeneration were found in the lower portion of the vessel, but growth of the nerve fibers from the upper and lower edges of the defect, particularly the former, was noted. Union of the nerve fibers was not observed.

While the author believes the complete removal of the sympathetic plexus is impossible, a distinct dilatation of the vessel occurs below the area of operation. Even as early as the evening of the day of operation the limb operated upon is warmer than the other. This condition continues for only a few

days at the end of a week the difference in temperature disappears. A second operation shows, however, that dilatation of the artery and a stronger circulation persist for three or four weeks. In the course of the second month, these differences disappear completely. JURASZ (Z)

Mithels, J. L. Peri-Arterial Sympathectomy in Arteriosclerotic Gangrene (Zur periarteriellen Sympathektomie bei arteriosklerotischer Gangraen) *Zentralbl f Chir* 9 2, 1, 309

This article is a report of two cases of a terminal sclerotic gangrene in which peri-arterial sympathectomy was performed on the upper third of the femoral artery. In both the course of the condition was at first favorably influenced, but after a short time (six and ten weeks) amputation became necessary because of edema and advance of the gangrene.

At this point the cause of this remission and the postoperative edema damage to the small vessels. He believes that after the sympathectomy these vessels became greatly dilated and allowed the passage of blood through their walls. Trophic disturbances and susceptibility to infection then resulted. RIMMER (Z)

SURGERY OF THE CHEST

TRACHEA, LUNGS, AND PLEURA

Mahalan, R. Hydatid Cyst of the Lungs and Pleura. *Surg Gynec & Obst* 9 3 1911 551

Hydatid cysts of the lungs are next in frequency to those of the liver and may cause severe symptoms and lead to complication and errors in diagnosis. They produce symptoms in the lungs early—hemoptysis and hacking cough which in the early stages is not associated with expectoration. In the lung there is slight development of the ectocyst. Hence rupture into the pleura or a bronchus or both is common. Rupture into bronchus causes violent fit of coughing, cyanosis, severe dyspnea, hemoptysis, and greater or less amount of purulent expectoration containing bits of membrane and daughter cysts. Hooklets may be found on microscopic examination. On rupture the cyst may become infected secondarily if it is not treated. This produces purulent sputum, hectic fever, great wasting and delirium. The patient's appearance suggests and needs tuberculosis. Rupture into the pleura stimulates pleural formation or empyema. A large unruptured cyst at the base of the lung may stimulate pleural effusion.

A typical case is that of an otherwise healthy person with a dry, hacking cough, the acute or no sputum. Repeated examination fails to demonstrate tubercle bacilli and hemoptysis suggests hydatid pulmonary disease, especially in country where hydatids occur. An oesophagus and post mortem diognosis test of Yonke, Apthorp or (bedome) are additional evidence. When the cyst becomes larger it is seen on the roentgenogram as a round shadow and causes decrease in the breath sounds or the absence. It may be necessary to delay the diagnosis until there are physical signs. An exploratory puncture which gives clear watery fluid confirms the nature and position of the disease. Puncture should be done only when the patient is prepared for operation. Leakage of the cyst contents may cause toxic symptoms, pleuritic pains and occasionally simple puncture of the cyst has been followed by infection and death.

Although spontaneous recovery sometimes takes place the author considers that surgical treatment offers the best chance of cure when the diagnosis is established. The cyst should be approached from the nearest accessible surface point. One or more ribs may be resected if necessary. The thoracic wall is held against the sound in the chest all by means of catgut suture repaired with a large curved needle through the intercostal muscle and the lung tissue. He then enters the position of the cyst again with the exploratory syringe. Usually the endocyst is easily removed. The ectocyst is so

delicate that the remaining cavity resembles normal pleura. In the author's opinion, the pneumothorax associated with wide opening of the pleura is not dangerous. The cut in skin of the lung is firmly sutured to the margin of the sound to control hemorrhage. It is sometimes difficult to find cyst again when the lung has collapsed within the chest. Opening the chest may be associated with severe coughing which causes alarming cyanosis. Usually the cyanosis clears up and the cough gradually subsides, ceasing within week.

The subsequent treatment consists in maintaining good drainage, giving nourishing diet, getting the patient up early, giving deep-breathing and other moderate exercise and keeping the patient in the fresh air and sunshine. WALTER C. BRADY, M.D.

HEART AND PERICARDIUM

Weller, C. V. Unusual Cardiac and Cerebral Metastases in Melanomatous Cancer of Cervix. *Arch Int Med* 13 3

The case of diffuse melanotic sarcomatosis in which death occurred after mechanical injury of the operation upon the pericardial mole, topography revealed in the brain solitary metastases in the floor of the fourth ventricle, numerous older cortical and cerebral metastases and diffuse meningial sarcomatous tissue of which had affected the clinical picture sufficiently to call attention to their presence. The meningial involvement exactly like that of certain cases reported as primary meningial melanomas and throws further doubt upon the possibility of such origin. There were also very numerous myocardial and endocardial metastases which had caused clinically evident relative to the diagnosis.

LESLIE C. ROBERTSON, M.D.

Colley, H. B. and Brown, P. K. The Surgical Treatment of Angina Pectoris. *Arch Int Med* 9 3 1911 200

In 1890 Frank first suggested resection of the cervical sympathetic trunk for the relief of the pain of angina pectoris. Jönsson, in 1902, as the first to perform such an operation, basing his argument for the procedure upon the fact that in angina there is always chronic aortitis which irritates the endings of the cardio-aortic plexus and that if the reflexes produced by irritation of the cardio-aortic plexus are interrupted, their alarming symptoms could be stopped. Frank described the routes by which such afferent impulses reach the medullary and cerebral centers, but recent investigations have been unable to demonstrate any afferent fibers even as far cephalad as the superior cervical ganglion.

The authors report five cases in which resection of the left cervical sympathetic trunk was done. Definite improvement resulted in four but one patient died. Such a procedure, of course causes exophthalmos, narrowing of the palpebral fissure, and constriction of the pupil on the side operated upon.

The reader is referred to Jönnesco's original article for complete description of the operation. The indications for it have now been extended to include glaucoma, exophthalmic goiter, epilepsy, and trigeminal neuralgia. *Loyal E. D. vs M. D.*

ESOPHAGUS AND MEDIASTINUM

Parsons, J. P. Enlarged Thymus—Clinical Findings in Series of Cases. *Med. Cl. N. Am.* 1913, 4, 39.

The author believes thymic conditions are not rare and that if these cases could be routinely discovered the death rate in pneumonia and other severe infections would be materially reduced, especially among children. The X-ray is a valuable aid in the diagnosis of enlarged thymus but is not infallible as long narrow thick thymus will not cast a shadow greater than that normally cast by the sternum and the great vessels and mediastinal glands. Moreover, chest picture taken when the diaphragm is contracted and the heart is in systole shows a thymic shadow in its stead.

Of a series of cases of enlarged thymus, six of seven were those of infants ranging from 3½ to 6 months of age and one as that of girl 5 years old. In seven of these cases the condition was revealed by the X-ray.

A review of these eight cases demonstrates that baby born with an enlarged thymus may show only very mild thymic symptoms until he acquires severe infection or has had several colds. That such babies are subject to colds and infections that thymic symptoms may not be noticed at all until after several colds and that repeated infections in infants with an only moderately enlarged thymus may cause grave disturbances. The infants whose cases are cited suffered from choking, croup, cyanosis, coughing spells or asthma and were relieved quickly by X-ray treatment of the thymus—one treatment a week for four successive weeks. Improvement is usually noticed after the first treatment and control X-ray pictures show a decrease in the size of the thymus. Sometimes the X-ray treatment is given as an emergency measure.

The condition must be differentiated from whooping cough, pneumonia, foreign body, croup, and asthma.

The author cites ten cases of enlarged thymus which resulted fatally when they were treated with diphtheria antitoxin. In one case chest plate failed to show the enlarged thymus which was found at autopsy. The other case was not examined with the X-ray. Death was not sudden in either instance.

In conclusion the author states that a thymic build is recognized. This is characterized by a short neck, chubbiness, and a thick panniculus. Enlarged thymus may be found also however in slim children. *FRANK H. DOWMAN, M. D.*

Hubert, L. Th. Enlarged Thymus Gland from the Viewpoint of the Laryngologist. *N. York M. J. & Med. Rec.* 1913, 107, 4.

Two groups of cases belonging to the tautothymic lymphatic type are described. The first are those in which the enlarged thymus is the most important and prominent feature and dyspnea, especially at night, is the most outstanding symptom. This condition will be suspected from the history and the nature of the dyspnea. Verification is obtained by the X-ray.

In the second group, called simply status lymphaticus or status hypoplasticus, are the cases with little or no enlargement of the thymus gland, but with hyperplasia of the lymphoid tissue and hypoplasia of the more important parts of the body, such as the heart, the aorta, and some of the glands of internal secretion, especially the adrenals, the pituitary, the genital glands, and the thyroid. These cases are characterized by nasal obstruction and general calcareous. It has been suggested that these cases might be demonstrated by the orthodiagraphic method, or the determination of the ratio between the heart and lung shadows in the X-ray picture. The normal ratio is 1:1.

O. M. ROTH, M. D.

Helsley, G. F. The Metastasizing Tendency of Esophageal Carcinoma. *Ann. Surg.* 1913, 57, 1.

In his review of the literature on the tendency of carcinoma of the esophagus to form early metastases, Helsley found considerable diversity of opinion. Forster and Bullroth, Sauerbruch, Grisez, and Meyer are of the belief that early metastases do not occur. Ewing, on the other hand, states that these tumors soon form extensive metastases. Peir, Zenker, and Coffe report metastases in 59.5, 60, and 62 per cent of their cases respectively.

A comparison of the figures quoted by Ewing with corresponding figures for carcinoma of the stomach indicates that esophageal carcinoma is not particularly prone to metastasize. Konyetsky says that only about 15 per cent of persons dying of carcinoma ventriculi are free from metastases. In an extensive study of esophageal carcinomata, Killian found that 68.5 per cent showed metastases, but if local metastases in the adjacent lymph nodes are excluded, the figure was 46.4 per cent. Of a series of cases of carcinoma of the stomach, 82.1 per cent showed metastases, but if cases having regional lymph-node metastases are omitted, the figure is 71.4 per cent. Other figures seem to bear out these findings. In seventy-two cases of carcinoma of the esophagus, Sebenius found 7 per cent free from organic metas-

Helday study is based on seventy fatal cases of carcinoma of the esophagus which according to the pathologic picture may be divided into the following groups:

1. Cases without metastases

Cases with metastases: the regional lymph nodes, the esophagus, the retro-esophageal lymph nodes and adjacent nodes in the posterior mediastinum and nodes around the aorta.

3. Cases with metastases in the more distant lymph nodes or in other organs.

Group 1 included forty-five cases, 64 per cent of the total number. Group 2 had four cases, 6 per cent of the total number. Therefore 70 per cent of the cases included in the report were free from distant or organic metastases, a fact seeming to indicate that even prior to the termination of life esophageal carcinoma shows a rather limited metastatic tendency.

I list the cases, the duration of the symptoms ranged from a few months to two years. In two cases there was never manifestation of the condition. In thirty-nine cases without metastases the average duration of symptoms was four and eighty-four hundredths months. In two cases symptoms had been present for one year or longer and in ten for six months or longer.

There are forty-eight esophageal carcinomas. Only eight of the patients survived this operation, lived less than thirty days after the operation, an average of five and three quarters days, while fourteen lived more than thirty days, an average of seventy-four and three quarters days.

M. M. H. SCOTT, M.D.

Miller, R. T. Jr. and Andrus, W. D. W. Experimental Surgery of the Thoracic Esophagus. *Bull. J. Am. Coll. Surg.* 1935, 30, 109.

The control of respiratory pressure has greatly increased the experimental work done on the surgery of the thorax, especially the esophagus.

In the treatment of carcinoma of the esophagus the extrathoracic procedure is associated with high risks and little chance of restoring the tube, while the intrathoracic method is surgically more simple and more apt to be followed by good functional results. The authors have devised an intrathoracic method.

The first part of the article deals with a review of the intrathoracic suture up to 1922, the work of Thorburn, Sauerbruch, Willy Meyer, Zander,

Janeway and Green Oml, and many others. The chief difficulty in most of this work was that the sutures tore out and if the resection was at all extensive the tension was too great. To overcome the former difficulty certain experimenters used the Murphy button, and to overcome the latter the stomach or the small intestine was drawn up into the thorax and sutured to the esophagus.

The method devised by the authors the stomach is mobilized drawn up into the chest through the diaphragm and sutured to the esophagus by an end-to-end bulkhead suture of Halstead. Anastomosis is induced with ether. The approach is made through the eighth intercostal space on the left side. The carinal separation from the diaphragm and the vessels are carefully ligated. The vagi may be sectioned. The fundus of the stomach is carefully drawn through the diaphragm and the entire stomach may be drawn into the chest with or without the spleen. The esophagus is divided at the cardia and the carinal stump is everted. The site of implantation is on the lesser wall of the stomach well posterior to the fundus, to the left of the cardia. Hemostasis is carefully checked. The stomach and the esophagus are brought into position by mattress sutures of fine silk, firm hold on the submucosa being obtained with the first row of sutures. The second suture layer, each of fine silk, includes only the muscle layer. The edge of the diaphragm is then sutured to the stomach.

The method described is illustrated with pictures. The chief object of the technique is to prevent tension, which is done by the mobilization of the stomach.

Fewer than one of eighteen the esophageal sutures held and a satisfactory healing with an intact functioning anastomosis resulted. The possible complications include hemorrhage, shock, dilatation of the stomach, diaphragmatic hernia and infection. Dilatation of the stomach and diaphragmatic hernia can be prevented by careful sewing the diaphragm to the stomach. The dilatation is probably not due to action of the gas but more experimental work is necessary along this line. Oml reported that he had completely excised the diaphragm in animals without causing marked sequelae and that he had observed Turkish soldiers in the First Balkan War who lived an active military life for a number of years after complete diaphragmatic hernia caused by gunshot wound.

JOHN L. BURROCK, M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Finkelstein, H. and Rohr, F. The Treatment of Tuberculosis of the Peritoneum in Children (Die Behandlung der tuberkulösen Bauchfellkrankungen im Kindesalter). *Semin. engl. Abhandl. d. Fortschritte und St. Jacobs A. 14*
9 11

Tuberculosis of the peritoneum is more frequent in children than in adults. On the other hand, very young children are seldom attacked by the form in which peritonitis is found alone or predominates. Of seventy nine cases treated in children hospital only seven were those of children under 5 years old. It has not been proved that one sex has greater predisposition than the other. A hereditary taint was suggested in only twenty seven cases.

The disease picture varies exceedingly. Thirty-four per cent of the children complained of abdominal pain. This, however, is not to be taken as an early symptom for as a rule it does not appear until after the parents have noticed changes in the child (pallor, nervousness, emaciation, disinclination to play). A sensation of fullness in the abdomen, occasional vomiting, and remittent fever are symptoms which may be more or less marked. The findings on palpation, rectal examination, and examination of the stools (tubercle bacilli are rarely found) do not afford the basis for a certain diagnosis. The condition most easily recognized is nodative tuberculous peritonitis. The second form, adhesive tuberculous peritonitis, is divided into the purely fibrinous form, in which usually the abdomen protrudes and is markedly tense, and the nodular adhesive form in which round tubercles arising in size from that of a pea to that of an apple can be felt and there is resistance between the navel and umbilical cartilage. The third form is ulcerous tuberculous peritonitis. From the surgical standpoint the seropurulent may be distinguished from the suppurative caseous form.

The prognosis is most favorable in the exudative form. Under various methods of treatment, with good care and nourishment and an extended period of life in the open air, the prospects of cure are good. External effusions should be evacuated by puncture.

In the adhesive forms the systematic application of natural or artificial Alpine sun rays aided by good food and care and fresh air represents a great advance in the treatment. At night, as in the exudative form, hot fomentations may be indicated. Röntgen treatment is important chiefly when the disease is circumscribed (caecal tuberculosis, infiltration of the omentum). The longer the disease has been present and the greater the induration,

curettage or calcification, the less benefit is derived from radiation. When elevations of temperature have ceased, treatment for absorption is indicated. The author has had no experience with fibrolytic injections.

Laparotomy is indicated only in particular conditions (hot abscesses, ileus) as it can do no more than convert a therapy and presents dangers and disadvantages (frequent scar hernia). In all cases rest in bed for two weeks until the exudate has become resorbed and the temperature has fallen to normal is imperative. Intestinal tuberculosis and the ulcerous form of tuberculous peritonitis are intractable to treatment even radiotherapy is useless and may be prejudicial (pain, weakening).

STERNBERG (Z)

Moss, F. An Unusual Tumor of the Omentum. Actinomycosis (Eine seltene Netzhochwurst. Aktinomykose). *Deutsche Zeitschrift für Chirurgie* 1922, 122, 1.

A somewhat movable, not painful tumor the size of a fist was found under the left costal arch of a markedly emaciated, anemic man 43 years old. The growth extended to the left kidney region. Laparotomy revealed a moderate amount of bloody exudate and a hard tumor larger than two fists below the transverse colon and somewhat medial to the splenic flexure. The growth covered half the circumference of the transverse colon and in its vicinity the wall of the colon showed nodules.

When the tumor was separated from the colon a white, dense and hard tissue slightly infiltrated by pus and granulations was found. The pus showed isolated yellow granules which, without doubt, were actinomycotic glands. Actinomycosis was demonstrated also macroscopically. The point of origin was probably actinomycotic involvement of the transverse colon. The postoperative course was good. The postoperative treatment consisted of the administration of large doses of sodium iodide (up to 30 gm. daily) and deep roentgen irradiation.

KOENIGSBERG (Z)

Hesse, E. The Surgical Pathology of the Transverse Mesocolon, with Particular Consideration of Traumatic Fissures (Zur chirurgischen Pathologie des Mesocolon transversum, unter besonderer Berücksichtigung der traumatischen Spalthernien). *Zeitschrift für Chirurgie* 1922, 122, 46.

The author reports a case in which the mesocolon was only 1 to 1½ cm. long and made it impossible to pull the transverse intestine forward to perform a posterior gastroenterostomy.

Fissures of the transverse mesocolon, particularly traumatic fissures, are extremely rare. The cases

are reported in which a severe injury of the abdomen from a fall was followed by increasing pain. The possibility that a portion of intestine may have become incarcerated in a fissure cannot be denied. The case came to operation because of gastric and duodenal ulcer, but it cannot be assumed that there was an relationship between the traumatic fissure of the mesocolon and the ulcer because in one case the ulcer was present previously and in the other the symptoms did not appear until three days after the injury.

A more common condition is secondary inflammatory change in the mesocolon in the form of dilated whitish dilatations. These are noted particularly in cases of gastric and duodenal ulcer and diseases of the colon and pancreas. Bosc (2)

Lesnowski, L. Circulation of the Mesocolic (Vascular) Angioma Mesenteria. *Polk. J. Chir.* 9, 3, 11

On the basis of clinical observation and x-ray studies the author concludes that incarceration in the mesocolic dilatation is a relatively frequent condition which begins in the fifth or sixth year of life. Frequently becomes more extensive and causes clinical symptoms about the thirtieth year of life. The beginning and the end of the sigmoid are narrowed by muscular shrinkage, thus giving rise to blocking which causes the clinical symptoms of ileus.

Clinically the condition can be demonstrated by roentgen-ray examination. The contrast meal is not used for an abnormal long time before and within the sigmoid flexure and then barium esum is given the ampull first becomes greatly dilated and the contracted transition passage into the sigmoid is manifested by contrasting streak. The sigmoid flexure itself is usually enlarged and has a circular form which, with the afferent and efferent loops, presents the shape of the Greek letter omega. At operation, this shape is particularly distinct. The constriction between the end of the sigmoid is easily recognizable. As a rule it occurs in only the left side of the mesocolon, but sometimes in places on the mesial side. In most cases it is limited to the peritoneum and does not affect the lumen of the colon between the peritoneal leaflets or the vessels.

The operation which the author proposes consists in simple section of the circular tissue, separation of the end of the sigmoid at a distance of 4 to 6 cm. and covering of the defect thus formed in the peritoneum by means of free transplanted omentum. A case operated upon in this manner is still without symptoms. (Continued later)

GASTRO-INTESTINAL TRACT

Sim, R. K. S. The Question of a Gastric Hormone. *Quart. J. Med. Sci.* 19, 221, 79

Histamine causes gastric secretion when injected intravenously. Contrary to the observations of

Pupelski and others who obtained secretion only when they injected it subcutaneously or intramuscularly.

Adrenalin does not inhibit the secretion provoked by the histamine but may delay its efflux from the stomach. In some persons adrenalin excites secretion.

There is no gastric exciting substance in the circulation after meals. The gastric secretion of Follin must be regarded as a contraction product rather than a secretion. The histamine of the gastric or gastric excitation in the stomach and duodenum corresponds to the distribution of mucous glands. It is suggested that the excretant is extracted from mucous cells.

The blood of fed animals has no apparent effect on gastric secretions, when transfused directly or indirectly.

Since there is no gastric exciting substance in the blood after meals the excitant found in pyloric and other extracts is not secreted in the blood stream and the mechanism of secretagogue action is not due to internal secretion. The question of gastric secretagogue secretion therefore remains unsolved.

WILLIAM HARRY M.D.

McKee, C. S. Diets in the Chronic Dyspepsia. *Cancer* 1, 9, 3, 21, 37

The development of the syndromes of the chronic dyspepsia has been long and tedious and has depended largely on the correlation of a thorough history and physical examination with operative findings and results. Chemical examination of the gastric contents, roentgenology, examination of excised tissue at operation and biopsy have all been factors in this development. The happiest results in diagnosis have been obtained best by conservative and efficient employment of all available methods. By these means the grouping of phenomena into syndromes has become limited and now is not only more definite, but also.

The syndromes of peptic ulcer (simple and complicated), gastric carcinoma, duodenal ulcer, cholelithiasis, chronic pancreatitis, the functional dyspepsias, and gastritis are outlined in some detail.

Complicated peptic ulcer, the purest local syndrome is characterized by periodical seasonal attack of epigastric distress at regular times which are caused by food and emotion and rest. The symptoms usually progress through successive shorter periods of freedom and the development of night pain. Differentiation between gastric and duodenal ulcer is difficult clinically and is function of the roentgenological behavior. Gastric ulcers are frequently atypical. A number of perforated ulcers cause pain suggestive of gall stone disease. Complicated ulcers have type. The distress becomes more or less continuous, food may add to the discomfort, alkalies become less efficient, vomiting is often induced, and the stomach tube is mainly used for relief. The stomach often suffers from obstruction.

In gastric carcinoma history which simulates that of ulcer is obtainable in about 34 per cent of the cases. In this group the old dyspepsia taken on a new character. In the remainder an alarming digestive distress develops suddenly. Persons with cancer appear ill and have an apprehensive docile attitude, a waxy pallor of the skin, marked loss of weight and strength, anorexia and epigastric distress which persists and progresses in spite of usual remedies. The finding of rancid food remnants and altered blood points to stasis and chronic ulceration.

The roentgen ray gives added accuracy in diagnosis and localizes the lesions. With the aid of roentgenograms, it is possible also to estimate with a high degree of accuracy the operability of malignant gastric disease.

Persons with cholelithiasis complain of gas shortly after meals and intolerance for fats, sour foods, and coarse vegetables. The distress is intermittent, and may be accompanied by transient right hypochondriac tenderness. In cholelithiasis there are, in addition, attacks of colic of sudden onset and sudden cessation. The pain may be referred to any direction.

The dyspepsia of chronic appendicitis is the least clear cut. The diagnosis depends on the development of a history of acute attacks with tenderness in the right lower quadrant and a dyspepsia irregular in character and relief.

There is no adequate classification of the functional dyspepsias. Their diagnosis depends on the exclusion of organic disease together with the deportment of the patient, the variability of the details of the history, the degree of distress from day to day and the presence of domestic, social or business disharmony. Migraine must be eliminated by its characteristic history.

In the Mayo Clinic the gastric and roentgenological laboratory procedures are co-ordinated and have for their purpose the estimation of gastric motor function, secretory activity, the discovery of departures from the normal in the luminal contour and motility of the stomach and duodenum and the localization of the lesion.

In all the dyspepsias pain is commonly felt in the epigastrium but the severity, duration, type, time of occurrence, method of relief and association of symptoms give valuable information in the differential diagnosis. Jaundice has limited value in the differentiation of the dyspepsias. The position of tenderness is insecure evidence of the location of a lesion, but is most important when present over McBurney point. Epigastric tumors associated with gastric distress are usually malignant. Hematemesis is an important symptom when it is associated with other gastric symptoms. The possibility of an associated hemophilia or purpura must be considered. Hematemesis occurs in about 3 per cent of cases of gastric ulcer, in 3 per cent of cases of duodenal ulcer, from 1 to 4 per cent of cases of disease of the gall bladder and in from 1 to 10 per cent of cases of chronic and subacute appendicitis.

A few cases of hematemesis have been observed in which the source could not be determined.

Ostrows, Z.: The Diagnostic Value of the Atropine Test in Pyloric Conditions (Ueber den diagnostischen Wert der Atropinprobe des Pylorus). *Roentgenologie* 9: 1, 8.

There are numerous cases of gastric and duodenal ulcer in which neither direct nor indirect symptoms of ulcer are observed. These are generally treated as gastric neuroses, simple hyperacidity.

Up to the present time it has not been possible to establish roentgenologically the causes of the adhesion of the gall bladder to the pylorus or the duodenum.

Ostrows attempted to solve these diagnostic problems by means of his tropine test. He reasoned as follows:

If the pericholecystic adhesions are caused by gall stones on the peritoneal coat of the duodenum would be involved, but if they are caused by a duodenal ulcer there would be extensive anatomical changes, the entire thickness of the intestinal wall and these would include the ganglion cells of the plexus of Auerbach in the wall of the intestine. The condition of the ganglion cells can be tested with atropine.

In cases of ulcer the pylorus is predisposed to spasm. The atropine will close the pylorus in cases of ulcer but not in health.

If the roentgen ray examination shows adhesions, the tropine test may explain the cause of these adhesions. Lack of motility of the stomach for four hours after atropine indicates a callous ulcer when as a negative test points more toward cholecystitis.

The exceptions to this rule are cases of gastric (constrictions, gastric erosions, recent shallow ulcers and extensive changes in the biliary ducts. In such cases the test is not conclusive.

The author tested 60 patients in this way and gives five characteristic histories. On his representation, atropine sulphate is not a suitable means, but much to relieve pyloric spasm, as in certain instances it can itself produce such spasm. He concludes that the positive tropine test is the result of stimulation of the ganglion cells of Auerbach by the tropine sulphate independent of its chemical reaction on the gastric juice. The positive test is generally characteristic of organic disease, particularly old, callous gastric or duodenal ulcer.

In pericholecystic adhesions without marked changes in the biliary ducts the test is negative.

Von LÖNNMAYER (2)

Heila, B.: The Surgery of Pylorospasm in Nursing Infants (Zur Operation des Pylorospasmus der Säuglinge). *Zentralbl. f. Chir.* 9: 3, 6.

Grooving of the pyloric tumor by Ramstedt's method without opening the mucous membrane and without suture is the simplest and best operative procedure in the pylorospasm of infants. Care is necessary, however, to keep the duodenum aus-

from the tumor mass as it can be easily damaged. The process of grooving is therefore begun in the middle of the tumor extended step by step toward both sides, and discontinued when the submucosa is reached.

The sharp retractor which Rammstedt uses does not always release the pylorus sufficiently as there is an increase of connective tissue between the muscle bundles. It must therefore be supplemented by dissection of the tumor with the dull blade. This blunt dissection prevents hemorrhage as well as perforation and gives immediate results. The operation is performed early before the occurrence of dilatation of the stomach with hypertrophy of the muscle wall. By roentgen ray examination the diagnosis of pyloric stenosis is easily established.

In twenty-seven cases operated on by the author there was only one death that of an infant coming to operation late. Rammstedt has operated upon fifteen cases with no deaths. These favorable results were due to the fact that operation was performed early whenever possible and subsequent treatment as given by competent pediatrician.

THOMAS (2)

Haas, M. H. Atropine in the Treatment of Congenital Pyloric Stenosis. *Med. Clin. N. Am.* 9, VI, 579

This report records several cases of congenital pyloric stenosis treated with large doses of atropine as first advocated by Haas. While atropine or belladonna had previously been given in these cases, it had never been given in the dosage recommended by Haas, who showed that even newborn infants will tolerate doses previously considered toxic.

Having decided on this form of treatment it is necessary to reach the maximum effective dose as rapidly as possible, observing the effect after each feeding rather than from day to day. It is advisable to give a drop of the 1:1,000 solution of atropine sulphate in water with each feeding. If the vomiting is not controlled, an additional drop may be given with the next feeding. As much as 7 drops or 70 gr. has been given in twenty-four hours.

In the more severe types, hypodermic administration has two advantages: first, one knows just how much atropine the child retains; second, one knows that the entire dosage offered is available to the child. With regard to the patient's tolerance one is guided mainly by the flushing of the skin. If this becomes marked soon after the hypodermic injection, the dosage may be considered sufficient or excessive.

In cases recovering, the atropine is discontinued gradually. Atropine alone will not necessarily cure pyloric stenosis, but it is useful in controlling the spasm which prevents the food from passing out of the stomach. It may be considered the most important part of the medical treatment but the many details of warmth, feeding, fluid intake, and hygiene must be looked after with the utmost care.

Judging from his own experience, the author concludes that every case of pyloric stenosis should be given the benefit of a thorough course of atropine as detailed. It is possible that in certain cases surgical intervention may be necessary but these are few and in the majority brilliant results will be obtained if the treatment is conscientiously carried out.

Four illustrative case reports are appended.

A case of pyloric stenosis with severe symptoms due to loss of fluid. Prompt recovery resulted under treatment with atropine and the subcutaneous introduction of fluid.

A typical case of pyloric stenosis with visible peristaltic waves and a palpable tumor. Atropine was administered usually by mouth every three hours. After large doses were begun the gain in weight was rapid—7 oz. in twenty-four days. The treatment was interrupted by vomiting.

A severe case of pyloric stenosis in a breast-fed infant showing visible peristalsis and palpable abdominal tumor. Large doses of atropine were necessary. The weight increased during the first month of treatment slowly and then very rapidly. Complete recovery resulted.

A severe case of pyloric stenosis with projectile vomiting but no palpable tumor. There was marked evidence of dehydration. Atropine was administered up to 40 drops of 1:1,000 solution per day. Complete recovery resulted in four weeks.

A. W. BRYAN, M.D.

Carwardine, T. The Diagnosis of Peptic Ulcer and Its Bearings on Treatment. *British M. Jour.* 9, 3, 21, 71

Duodenal ulcer is more common than gastric ulcer. Chronic gastric ulcer is more often seen in men than in women but women are treated for this condition when it is not present more often than men. Many reflex conditions are treated as gastric or duodenal ulcer.

The author states that of all cases referred to him for the surgical relief of peptic ulcer during the past year the diagnosis was correct in only one third.

Probably 25 per cent of patients receiving medical treatment over a period of five or six weeks without improvement will die if not relieved surgically. Five hundred cases were seen in the London Hospital in the five-year period from 1897 to 1901. The mortality in these was 8 per cent. Forty per cent of the deaths were due to relapse and 1 per cent to perforation.

There is no doubt that the most accurate means of diagnosis is the roentgen ray examination. With increasing skill in taking rapid exposures and better interpretation of the films, a greater number of cases are detected each year. Carman of the May Clinic is quoted as making an accurate positive and negative diagnosis in 95 per cent of cases seen in a period of six months, 7,000 in all.

The symptoms are classified by the author as follows:

- 1 Reflex (1) visceromotor pain by paralyzation
- (2) visceromotor rigidity and increased reflexes
- (3) visceromotor vomiting and depression

Hyperalgesia (to pinching of skin) Is not considered a certain guide

3 Muscular rigidity Seen only when the peritoneum is involved extreme rigidity immediately after perforation

4 Tenderness Unreliable often misleading symptoms several organs may give similar reflexes

5 Pain Only cause is tension no pain in ulcers prior to perforation

6 Hemorrhage Unreliable diagnostic symptom more often caused by appendix or gall bladder

7 Vomiting Unreliable except in pyloric obstruction initiated by central impulses in young women is often hysterical

8 Test meals Test meals are not very reliable as diagnostic agencies W J Mayo states that chemical and microscopic examinations of the gastric contents were of little diagnostic value in 300 cases studied

9 Hunger pain Due to contraction of the intestinal canal found in all forms of hypersecretion Reference is made to cases of calculus in the right kidney in which both hunger pain and high gastric acidity were present Other conditions suggesting peptic ulcer are appendix dyspepsia, the presence of omental bands or other adhesions, and abdominal tuberculosis

HAROLD M. CAMP, M.D.

Koenigsack, W. The Pylorus and Predisposition to Ulcer (Pylorusmagen und Ulkarpredisposition). *Zentralbl. f. Chir.* 931

The author began his animal experimentation with the assumption that there is no decided difference in the genesis of gastric ulcer, duodenal ulcer and peptic ulcer of the jejunum. As, on the one hand, artificial exclusion of the pylorus forms peptic ulcer of the jejunum and, on the other hand, strikingly high percentage of cases of postoperative jejunal ulcers exhibit primary duodenal ulcer or a pyloric or duodenal stenosis, bilateral exclusion of the pylorus as done experimentally (transverse resection of the stomach from 6 to 8 cm. above, and of the duodenum 10 cm. below the pylorus and lateral anastomosis of the excluded portion of the pylorus with the lower ileum). Following this a Billroth or operation as done

After the Billroth operation a penetrating jejunal ulcer as found in one of five dogs

In second series of experiments seven dogs were operated upon, but in these a bilateral division of the pyloroduodenum as performed. All of the animals developed typical callous and deeply penetrating ulcers. The author explains this finding by the assumption that in the absence of the normal inhibition due to the exclusion of the pylorus, there was a physiological excitation of gastric secretion

The author concludes that exclusion of the pylorus should be avoided and resection of the ulcer of the

pyloric portion or the duodenum should be done. In inoperable ulcer of the duodenum the treatment should consist in resection of the pyloric portion of the stomach including the pylorus followed by the Billroth operation. Gastroenterostomy is rarely indicated in cases of ulcer when the pyloric and duodenal passage is unobstructed. LANGE (2)

Sweet J. E. Buckman L. T., Thomas, A. and Bell, L. M. The Pathogenesis of Peptic Ulcer. *Arch. Surg.* 923, 74, 837

Medical literature abounds with theories relative to the etiology and pathology of gastric and duodenal ulcer. The authors became interested in this problem following the observations of Ellis, who produced hemorrhagic erosions and ulcers in dogs by the intravenous injection of toxins isolated from animals with high intestinal obstruction. Saprophytic infection was followed by similar lesions

The authors attempted to produce gastric ulcers in the dog by means of (1) functional high obstruction (2) a blind duodenal pouch and (3) by looping the small bowel to cause chronic torsion. They accept the definition of peptic ulcer as a circumscribed loss of tissue in the wall of the stomach or duodenum surrounded by areas of acute inflammation and involving one or all of the coats of the intestine. They believe that most acute ulcers heal rapidly and that chronic ulcers result from unhealed acute lesions. The mechanism of an ulcer they attribute to the pull of the muscle fibers about the ulcer margin

Smithers regards high acidity as having no bearing on delay in the healing of an ulcer. Bolton believes that the retention of bacteria and a high acid content of the stomach cause continued infection and irritation of the ulcer

In some of their experiments on dogs the authors sectioned the duodenum but less than 10 cm. from the pylorus, closed the cut ends and anastomosed the distal segment of the small bowel to the stomach. The dogs surviving the operation showed hypertrophy and distention of the blind pouch with hemorrhagic erosions but no distinct ulcers

Another series of experiments based on the supposition that chronic obstruction leading to low grade malnutrition might induce ulcer formation

In this series of animals the duodenum was interrupted by itself making partial closure. In another series the duodenum was surrounded by fascial bands 4 cm. from the pyloric sphincter. No ulcers developed in the first series

In another experiment blind duodenal loop was made with drainage through the distal segment from the stomach. In these cases few suggestive ulcerations were produced

The authors discuss the length of the small intestine that peptic ulcer occurs in regions of the gastrointestinal tract of embryonic importance as in the stomach, where islands of intestinal glands are

with gastric glands in the esophagus, where there are islands of gastric mucosa and in the duodenum there are islands of pancreatic tissue. Within such glands, he believes, there is an intracellular activation of digestive ferments by virtue of which the glands themselves and the surrounding tissues are digested.

In conclusion the authors state that it is difficult to explain why bacterial embolism should affect only a circumscribed round area and should produce an ulcer in spite of a rich arterial anastomosis. Mechanical abrasions or digestion by gastric juice will not explain ulcer formation when we consider how perfectly healing occurs after operative section of the entire wall of the stomach.

JOHN W. NICHOLS, M.D.

Portis, M. M. and Portis, S. A. Multiple Peptic Ulcers. *J. Radiol.* 9: 311, 31.

Multiple peptic ulcers occur more frequently than is commonly supposed. They may be confined entirely to the stomach or the duodenum or may develop in both. Whereas formerly the diagnosis was made only at operation or at autopsy since the use of the roentgen examination it is frequently made before operation. When the ulcers are numerous they are usually of the acute type, but when only two or three are present, they are generally of the chronic variety. Most of the ulcers diagnosed by means of the roentgen ray and found at operation are of the chronic type.

In every roentgen ray examination for ulcer it is important, if one is found, to look carefully for another. As small ulcers are very difficult to detect they are often missed unless an especially careful search is made for them.

The histories of two cases of multiple peptic ulcers are reported in detail.

ABRAHAM HARTMAN, M.D.

Mann, F. C. and Williamson, C. S. The Experimental Production of Peptic Ulcer. *A. S. S.* 9: 3, 1909, 409.

Acute gastric or duodenal ulcers can be produced experimentally in the relative ease and the methods which produce them are numerous. Very little success has been attained however in the experimental production of the typical chronic or subacute peptic ulcer occurring in man. One of the most important facts in regard to peptic ulcer is its anatomical and physiological location. An absolutely typical ulcer of this kind occurs only in that portion of the gastro-intestinal tract which can be exposed to the action of mineral acid. This would seem to indicate that acid is an important etiological factor. The results of experiments devised to administer acid for the production of ulcer have been unsatisfactory because of difficulties in its constant administration.

In order that intestinal digestion may proceed, all the acid which is produced in the stomach must be neutralized. This neutralization is effected by the food and by an alkaline mechanism located distal

to the pylorus. The alkaline mechanism consists of three sections, intestinal secretion, pancreatic juice and the bile. If digestion in the intestine is to be carried out normally enough alkali must be produced by these combined secretions to neutralize the acid that passes the pylorus. The upper portion of the intestinal tract can be subjected to an acid medium just as effectively by damaging the alkaline mechanism as by the administration of acid, the difficulties of such administration being thus avoided.

Experiments were carried out which had for their purpose the injury or destruction of the alkaline mechanism so that the intestinal tract distal to the stomach would be subjected to an acid medium. Although several series of experiments were done the main procedure consisted in resection of the duodenum and transplantation of the pancreatic and common bile ducts into the ileum or drainage of the three secretions of the duodenum into the ileum at a considerable distance from the point of emergence of the acid from the stomach. After such procedures ulcer develops in the intestinal mucosa just distal to the pylorus in a very high percentage of cases. These ulcers grossly and microscopically present the major characteristics of the chronic and subacute ulcer found in man. A method has thus developed for the constant experimental production of peptic ulcer which corresponded physiologically to the lesion occurring in man.

Goepel, R. Direct Resection of the Stomach and Duodenum After Gastric Resection by the Investigation Method (Die direkte Wiedervereinigung von Magen und Duodenum nach Magenresektion durch das Linsenschnittverfahren). *Zentralbl. f. Chir.* 9: 3, 1909.

Goepel describes a new method of reuniting the stomach and duodenum following operation for gastric ulcer or carcinoma. This method is a modification of the Billroth procedure. Instead of the classical sero-serous suturing a decision of fresh wound surface in the stomach is joined to the intestinal wall that has little or no serosa. A new principle which, up to the present time has not found application in gastro-intestinal surgery and admits of successful application also to other portions of the gastro-intestinal tract.

The method is briefly that the line of resection on the stomach and duodenum is first marked off with the scalpel, as much as possible of the lesser curvature being included. Then after separation of the sero-muscular coat of the stomach along the indicated line the gastric mucosa is exposed through small incisions, the stomach and pylorus are elevated, and the stomach is separated along the line of the first small incision. Extensive prolapse of the gastric mucosa in the portion selected for the anastomosis is cut away. Following this, partial occlusion of the stomach along the lesser curvature is effected, beginning with running (rough all layers). Approaching the area to be implanted, the sutures

the mucous and serous layers are united for some distance so that a closed ring of mucosa and a somewhat larger closed ring of serosa are formed.

The actual suturing of the stomach and duodenum is begun by uniting the free edge of the serosa of the posterior wall of the stomach with the posterior layers of the duodenum in transverse direction at the level and sometimes including the edge of the pancreas, which had previously been pushed back. By second transverse line of suture at a distance of about 1 cm from the first the duodenal wall is united with the inner layers of the muscularis of the stomach. Both of these two rows of suture are inserted while the pyloric portion of the stomach is still connected with the duodenum. Not until these rows in the posterior layers of the duodenum are terminated and the reciprocal position of the stomach and intestine is thus assured is the separation of the duodenum performed. This separation is effected at a distance of about 1 cm from the second row of suture.

The duodenum then opens directly into the ring formed by the gastric mucosa. This ring of mucosa is sutured to the duodenal opening by circular row of interrupted sutures. The anterior sero-muscular layer of the stomach then falls cuffed like over the duodeum and is joined to the anterior wall of the latter by two rows of sutures by the same method as that used in suturing the posterior surface. A final serous line of suture completes the union of stomach and duodenum.

The author has used this method with good results in several hundred cases. *Lewis (Z)*

Eglersted, E. Freudenberg, E. and von Redwitz, E. Experimental Investigations on Changes in Digestion After Operations on the Stomach and Intestines (Experimentelle Untersuchungen über die Veränderung der Verdauung nach Magen- und Darmoperationen). M. B. Deutscher 1913, 11.

Experimenting on ten dogs with gastric fistulae the authors investigated the effects of the common gastric operations, gastro-enterostomy and its various modifications, on gastric chemistry.

After perfusion of bile and of the collected duodenal juices through the stomach, only peptic digestion as observed. After excision of the pylorus and perfusion of bile and duodenal juices only tryptic gastric digestion as demonstrable. After gastro-enterostomy no peptic digestion, and only weak tryptic digestion, as observed. On the other hand, almost the same reaction prevailed in the efferent loop of the gastro-enterostomy but there was a larger bile content and a strong tryptic digestion.

After the Billroth I and II procedures and after excision of the pylorus, only tryptic digestion was found in the gastric fundus.

Following excision of the pylorus, after which the acidity was considerably greater than after the two resections, the digestion was correspondingly very weak since the reaction for peptic and tryptic

digestion was also unfavorable. In the pylorus there was only peptic digestion.

In general, the changes in the acidity of the chyme corresponded to the impairment of protein digestion and the decrease in fat digestion in the stomach.

From the experimental findings the authors draw the conclusion that excision of the pylorus according to an Eschberg should be abandoned, and that the resection methods with the reestablishment of continuity (Billroth I transverse resection) are preferable to all others. *Wassermann (Z)*

Dawkins, J. Benign Tumors of the Stomach. A. S. 1913, 1, 380.

Five cases of benign tumors of the stomach are reported: one of multiple polyps, three of papillary adenoma (one of which had undergone malignant degeneration) and one of fibroma. The ages of the patients ranged from 35 to 67 years.

The benign gastric tumors most frequently reported are the various forms of myomata. These tumors appear to attain the largest size. Multiple gastric polyps is the least frequent growth. The myomatous and fibromyomatous may become cystic or undergo sarcomatous degeneration.

There is a histologic difference between the true multiple polypoid tumors and the papillary adenomata. A preoperative diagnosis of gastric polypoid is made infrequently as the smaller tumors cause no symptoms. However the roentgenographic appearance and the achylia gastrica with the egg white mucus in the large return are characteristic of the condition. In cases of other forms of benign tumors the diagnosis may depend on the presence of a palpable growth, anemia due to repeated hemorrhage or the appearance of a portion of the tumor in the vomitus, stool or large return. The symptoms of pyloric obstruction may be caused by a tumor near the pylorus. Two cases of intussusception through the pylorus have been reported.

Except in cases of multiple polypoid, nothing of diagnostic importance can be learned from gastric analysis as the findings range from achylia to hyperacidity. Except in cases of tumor obstructing the pylorus, the X-ray examination shows no barium residue less frequently than in cases of carcinoma. A large tumor produces the same X-ray picture as carcinoma. Occasionally a persistent defect may suggest tumor, or an extragastric tumor may cause a defect in the gastric outline.

A summary of the operative indications is difficult as benign tumors differ in structure, size, location, and character. Surgical removal of the tumor should be done when indicated by the symptoms or when the diagnosis can be made either before or at the time of operation. With the exception of cases in which multiple tumors are present, the technical difficulty is usually less than in malignant disease because of the absence of infiltration, ulcerations, and metastases in the regional glands. Recurrence will not develop if the tumor is thoroughly removed.

E. C. Romberg, M. D.

Bahrmansson, G. On Acute Purulent Processes in the Intestinal Wall. Contribution to the Knowledge of Phlegmonous Enteritis. *Acta chirurg. Scand.* 923 IV 437

Limited purulent processes localized in the intestinal wall, or proceeding from the appendix or a diverticulum, are not so rare as would appear from the literature on so-called phlegmonous enteritis. The difference between these phlegmons, in limited sense of the word, and other purulent affections of the intestinal wall is only gradual. The disease may appear in any part of the intestinal canal but is most frequently found in the colon. It is usually of enteric origin, although a hematogenous infective modus cannot be denied. It varies considerably in different cases, oscillating between a violently acute course and transitory forms of the chronic inflammatory tumors. The process may heal spontaneously at any stage without leaving any after trace or with fibrous contraction and structure of the lumen.

In several cases a mechanical insult may be presumed to have established the point of entry for the infection. In different cases different bacteria have been found as causal agents. In the more acutely progressing cases streptococci are probably the cause.

The macroscopic picture of a phlegmon of the intestinal wall is so characteristic that in most cases diagnosis can be made without difficulty. Peritonitis is not always present but when it develops the regional lymph ducts are involved. The margin between the diseased and healthy tissue is seldom sharp, and the microscopic margin usually extends slightly beyond the macroscopic margin. A clinical diagnosis has never been made before operation. The symptoms vary considerably according to the localization of the condition and the virulence of the causal bacteria. Operation is always indicated if the patient's condition will allow it. Although several cases of spontaneous healing are known, the results of resection speak in favor of this method of treatment when it is technically possible.

CARL R. SPENNER, M.D.

Rosenau, K. Developmental Anomalies of the Intestines as Causes of Intestinal Obstruction. (Entwicklungsstörungen des Darms als Ursache von Darmverengungen). *Deutsche Zeitschr. f. Chir.* 93, 1, 189, 197.

The various malformations of the intestines and mesenteries can be understood only from their embryological development. Among the most simple forms is the mobile cecum with common mesentery for the lower ileum and ascending colon which favors volvulus and invagination. When the common mesentery is well developed, axis torsion of the entire small intestine with the ascending and transverse colon around the axis of the common mesentery and extensive invagination of the cecum into the large intestine may be observed. Volvulus of the sigmoid flexure is also to be considered as a

primary developmental anomaly of the large intestine. Deficient fastening of the transverse colon to the stomach favors volvulus of the transverse colon.

These various anomalies have a surgical interest as they render the diagnosis of abdominal diseases very difficult. In most cases they are recognized only after the abdominal cavity has been opened.

DANIEL (2)

Long, J. W. The Value of Enterostomy in Intestinal Obstruction. *Texas State J. M.* 933 XVII, 606.

Enterostomy is indicated in two widely different pathologic conditions, one characterized by starvation and the other by toxemia and sepsis. An example of the former is the case of inoperable carcinoma of the stomach situated near the cardia, and an example of the latter the case of obstruction lower in the alimentary canal.

Enterostomy is done both to prevent and to relieve obstruction. In bowel resection for any cause, the insertion of a tube in the proximal gut constitutes the prophylactic type of enterostomy. Enterostomy is not advocated if the exclusion of other operative procedures by which the primary cause of the obstruction can be removed without causing too great trauma.

In the paralytic type of ileus neither enterostomy nor any other operative procedure is of avail. It should be born in mind that, if unrelieved, the mechanical type of ileus soon becomes the paralytic type because of the advancing sepsis and toxemia.

In doubtful cases it is a good rule to operate, as without operation death is certain and the opening of the bowel and the use of pituitrin may stimulate the intestine to activity.

It is rarely necessary to remove the patient from his bed or to give general anesthetic.

By far the best, the simplest, and the safest plan is to surround the presenting coil with gauze to prevent possible soiling, apply a pursestring suture of fine chromic gut, puncture the coil with a scalpel or a small thermocautery (Long prefers the latter because it prevents bleeding and eversion of the edges, seals the layers together and promotes the ultimate healing of the fistula), and, after tying the pursestring suture which inverts the edges, introduce another similar suture. It is well to catch the tube with one of the sutures to prevent penetration from pulling the gut away from the tube.

The most important item in the technique is to secure the omentum about the fistula and tube. The ideal plan is to pass the tube through a small hole in the omentum. If the omentum is thin, it should be bunched about the fistula. In any case, it must be fastened to the gut by two or more sutures. The proper use of the omentum around the fistula insures prompt closure after the withdrawal of the tube. Long has had a number of cases in which there was not one drop of leakage.

after the tube was withdrawn. The intestine covered with omentum, may be sutured to the parietal peritoneum if desired but Long believes it is usually better to place iodoform gauze between the omentum and the peritoneum after removing the first piece of gauze. This will quickly promote adhesions and incidentally will act as a temporary superficial drain.

The mortality following enterostomy is necessarily high and always will be because the operation is usually done only in the most desperate cases. Of eight patients subjected to enterostomy in the period from 1901 to 1908 five recovered and three died. Of ninety three operated upon in the period from 1904 to 1913 fifty one recovered and forty two died. Therefore in 20 cases there were fifty six recoveries and forty five deaths.

CARL R. STEEDER, M.D.

Cavina, C. Experimental Research upon Artificial Stenosis of the Intestine (Ricerche sperimentali sulla stenosi artificiale dell'intestino). *Ann. Nal. Med.* 9, 2, 1.

Following the usual methods for entero-anastomosis the intestinal contents show a marked tendency to follow the normal route rather than to empty through the newly created opening. To obviate the inconveniences arising from this without resorting to transverse intestinal section many surgical methods have been proposed to cause stenosis of the intestine beneath the anastomosis. These may be divided into two principal types, the plastic and the ligature methods. The ligature method may be further subdivided according to whether the material employed for the ligature is inorganic or organic. The author reviews the literature on these various methods.

In the surgical clinic of the University of Bologna, Cavina carried out fifteen experiments on dogs to test the value of the ligature methods and ligature materials. In two experiments intestinal stenosis was caused by metal ring in two, by cotton tape in three by aponeurotic strips and in five by an extra-mucosal plastic. The intestinal union was latero-lateral anastomosis of two loops in double plane of continuous sutures and as a rule was antiperistaltic. The ligation with strips of aponeurosis was done by the technique adopted by Bogoljuboff (1908). The strips were obtained from the anterior sheath of the abdominal rectus muscle.

In experiments in which the attempt was made to cause stenosis of the ileum by means of metal ring or cotton tape it was found that the intestinal lumen returned to practically normal after a short period of time. It was discovered also that intestinal stenoses obtained by means of inorganic materials are only temporary and that the ligature cut through the intestinal wall and finally reached the lumen from which it was expelled.

The experiments executed according to the Bogoljuboff technique showed that ligaturing the intestine with a living aponeurotic strip gives much

better results than those obtained by means of inorganic materials. With an autoplasmic strip an intestinal stenosis can be obtained which, even if anatomically incomplete, is very marked and persists for a long period of time—in the author's experiments, from three to five months. The strip does not pass through the intestinal wall, but like all other free grafts shows a tendency to undergo degeneration and necrosis.

An extra-mucosal plastic caused only a temporary very sharp occlusion; the intestine rapidly became patent.

Of all four methods of ligating the intestine the aponeurotic strip method gave the best results.

W. A. BREYER.

Haudek, M. The Reliability of the Roentgen Diagnosis of Duodenal Ulcer (Zur Frage der Verlässlichkeit der Röntgendiagnose des Ulcus duodeni). *Monatsh. f. Chir.* 9, XXV, 187.

In one and half years Haudek has made the roentgenological diagnosis of duodenal ulcer in seventy cases. In thirty six of thirty eight cases the diagnosis was confirmed at operation, but this was sometimes possible only after resection. The roentgenological diagnosis was based on direct symptoms, these being (1) bulb deformity (2) lessened intensity of the shadow and (3) transitory filling. The shadow, which Akerlund found in 66 per cent of his cases, was seen by Haudek in only 20 per cent on fluoroscopic examination.

Of the total number of ulcers observed, 35 per cent were in the middle region of the stomach, 5 per cent were prepyloric, and 55 per cent were in the duodenum. For filling the duodenum Haudek employs a concentrated watery suspension of baryum. The patient is examined in the erect position, but if necessary is first placed on his right side with his pelvis elevated.

CRABTREE (2).

Enfield, C. D. The Relative Value of X-Ray Evidence in the Diagnosis of Duodenal Ulcer. *J. Radiol.* 9, 3, 147.

This article is based upon forty cases. The analysis included an exhaustive history, careful physical examination, gastric analysis, complete blood examination, including a Wassermann test, urine analysis, test for blood in the stools, and an X-ray examination of the entire gastro-intestinal tract including the gall bladder. The confirmation of the diagnosis rested upon the prompt and decided response to medical treatment.

A typical ulcer history was given in 45 per cent of the cases. In 35 per cent more the history, although not typical, was suggestive. Physical examination was of little value, the only sign being epigastric tenderness and rigidity in 70 per cent of the cases. Gastric analysis was conducted by the fractional method; curves typical of ulcer were obtained in 37.5 per cent. Occult blood was found in the gastric contents in 20 per cent and in the stools in 25 per cent.

In the X-ray examination 80 per cent of the cases were found to have a persistent cap deformity. In the other 20 per cent the evidence was indirect, that is, no normal cap was obtained by postural or palpatory efforts, and hypertonicity, hyperperistalsis, and hypermotility were present.

The author believes the X-ray examination deserves first place in the diagnosis of duodenal ulcer because its findings are based upon two pathologic changes, the break in the continuity of the mucosa and the surrounding inflammatory zone with its irritated nerve endings. The history he regards as second in importance.

C. H. HEADOCK, M.D.

Diegel, L. J. A Case of Carcinomatous Ulcer of the Duodenum (Ein Fall von Ulcus carcinomatosum duodeni). *Arch f Verdauungsst.* 1923, 22, 206.

In the case reported, that of a 60-year old man, a diagnosis of duodenal ulcer with periduodenal adhesions was made on the basis of the history, occult hemorrhage, and the roentgenographic finding of enlargement of the duodenal bulb with pocket formation at the lesser curvature and a constant hour-glass constriction at the greater curvature of the bulb.

Operation showed the presence of a tumor opposite the papilla of Vater which had invaded the pancreas. The course of the disease confirmed this assumption. Unfortunately a postmortem examination was not made. The roentgenographic finding was caused, not by an ulcer niche, but by pocket formation produced by adhesions. Therefore this condition as a source of error should be borne in mind. In every case of duodenal ulcer even those in which the ulcer is on the posterior wall, the occult bleeding will cease when rest cure is given and then will appear only intermittently. Constant occult bleeding suggests carcinoma.

VON KROEMER (Z)

Mann, F. C., and Kawamura, K. Duodenectomy—A Report of an Experiment Four Years After the Operation. *J Lab & Clin Med* 1923, 12, 53.

The duodenum was removed from a dog and the continuity of the gastro-intestinal tract restored by an end-to-end anastomosis of the jejunum to the stomach. The first portion of the jejunum thus assumed the position normally occupied by the duodenum. The common bile duct and pancreatic ducts were transplanted into this transposed portion of the jejunum at approximately the same distance from the pylorus and from each other as they occurred normally.

The experiment is of interest because it shows (1) the effect of removal of the duodenum and (2) the effect of transplantation of the common bile and pancreatic ducts. The animal remained in perfect health and maintained its normal weight for four years following removal of the duodenum, and there is no reason to believe that the duodenectomy would

ever have affected its health if it had been allowed to live longer. The experiment therefore definitely proves that in the dog the duodenum is not essential to the maintenance of life or good health, and that whatever function it may have can be compensated for by the remainder of the intestinal tract. It is also shown that the transplantation of the bile and pancreatic ducts can be carried out successfully so that these glands will remain practically normal for a long time.

Braun, A. Primary Intestinal Phlegmon (Zur Kenntnis der primären Darmphlegmone). *Beitr z Klin Chir* 1923, 22, 4.

The author reports a case of intestinal phlegmon in a man 35 years old who was admitted to the hospital with the diagnosis of peritonitis. Nine years previously he had been killed in the abdomen by a horse and seven years previously he had been treated in a hospital for suspected typhoid. Later there had been pain in the lower abdomen which was associated with vomiting and headache. Several days before his admission he experienced sudden pain in the region of the umbilicus and in the right side of the abdomen. No vomiting occurred. Three or four normal stools were passed daily. There was slight tenderness on pressure in the iliocecal region, and an indefinite resistance was noted on deep pressure.

At operation the appendix was found normal, but the lowest loop of small intestine about hand-breadth from its entrance into the caecum presented a definite thickening of its wall. The serosa was markedly reddened and the mesentery heavily infiltrated with old whitish scars. Digital examination disclosed several open ulcerations in the intestinal mucosa. One of the omentum nodes as removed for pathologic examination simple inflammatory changes were found.

After the operation the symptoms improved somewhat, but the sensation of pressure in the abdomen remained. At second operation it was found that the thickening of the intestine had decreased and the serosa and patency of the gut were normal. The appendix however was greatly distended and therefore was removed. Smooth recovery followed.

Intestinal phlegmon usually has an acute onset and a poor prognosis. The chronic cases (for exacerbations, may finally go on to complete cure, but the signs of stenosis in the affected intestinal loop persist.

BROOK (Z)

Matthews, A. A. Megacolon. *North Am Med* 1923, 35.

Matthews reviews the literature on megacolon and reports 15 cases. Although the disease is described as early as 85 by Parry Minichapung, splendid monographs on the subject are attached to his name to it. In the author's opinion idiopathic dilatation of the colon congenitum are the most appropriate

condition Finney in 1908 found 208 articles on the subject and Dowd reviewed the literature up to 1927.

The cause of megacolon is still unknown. The majority of cases have a congenital origin. True megacolon occurs in infancy. Cases occurring in adult life (pseudo megacolon) are presumably due to an aggravated type of chronic constipation. While the entire colon and sigmoid may be involved, Blummary states that the sigmoid was chiefly affected. So per cent of his cases. Approximately three males to one female are affected. There is a slight familial tendency as to cases in each of several families have been reported. The degree of dilatation of the large bowel varies greatly. Cases have been reported in which the colon contained from 4 to 6 liters of fecal material.

It seems probable that a number of factors are responsible for the dilatation of the large bowel, viz. congenital hypertrophy of the muscular fibers about the rectum and abnormally long mesentery of the sigmoid, chronic constipation, mechanical obstruction, resultant distention and by hypertrophy of the colon, spastic constriction of the sphincter and neuropathic dilatation, hypertrophy, etc.

The chief symptom of megacolon is obstinate constipation, bowel movements occurring only once every several days or even only once a week. The constipation is associated with abdominal distention, emaciation, foulness of the breath, cold clammy skin, low blood pressure, audible borborygmi, intermittent attacks of diarrhea and its malodorous discharge if it is not relieved. Clinically the disease is readily recognized if the patient is examined before the bowels are evacuated. The history, the physical findings and the barium enema make the diagnosis certain.

In the majority of cases megacolon is best treated surgically since medical treatment yields only temporary relief. Surgical treatment aims at the removal of the functionless segment of large bowel and is best carried out in one or more stages. Preliminary operations followed later by colectomy is usually the operation of choice. It is certain that the one or three stage operation carries the lowest mortality and gives the best result.

The first case of that of boy 3 years of age developed infantile constipation early in life. The original obstruction was at the ileocecal junction. The abdominal distention appeared and the patient died when he was 11 months of age. The entire colon and sigmoid were found dilated being larger than the colon of the adult. The sigmoid showed marked hypertrophy of its muscle and had abnormally long mesentery. The second case that of an adult male first seen in consultation on dilatation of the operating table. The large bowel filled the abdomen. The appendix was removed and a colectomy established. After the operation enormous quantities of fecal material were expelled through the colostomy opening. The general condition then rapidly improved.

JOHN W. NEW, M.D.

Firth, D. and Playfair, K. Congenital Idiopathic Dilatation of the Colon. *Arch. Radiol. & Elec. Med.* 77, 923, XXIV, 1.

The authors report a case of congenital idiopathic dilatation of the colon. The report is illustrated with roentgenograms demonstrating the condition. The patient, a boy of 10 years with a history of constipation from birth. The stools were hard and small. Frequently the bowels were not open for as long as three weeks at a time. The patient was sallow but in a fair state of nutrition. His appetite was good. The rectum was ballooned and within it mass of hard feces the size of an orange was felt. A large hard mass was palpated in the left iliac fossa. The circumference of the abdomen was 31 in.

After cleansing of the bowel with an enema, bismuth meal was given and X-ray examinations were made at intervals for twelve days. During this time the bowels were never open. The sigmoid and colon contained bismuth within twenty-four hours, and later the descending and transverse colon. Between the sigmoid and descending colon there was a definite kink. Two subsequent observations revealed a markedly enlarged sigmoid and descending colon. There was a sharp angular scoliosis due to congenital maldevelopment of the left half of the tenth dorsal vertebra.

Waleley suggested that possibly the dilatation of the colon may have been related to imperfect development of the splanchnic nerves given off at the level of the half vertebra.

CARL D. NEEDHAM, M.D.

Carmann, R. D. Roentgenological Signs of Cancer of the Colon. *J. Radiol.* 9, 5, IV, 147.

The author summarizes the findings in a series of 349 patients with cancer of the colon examined and operated on at the Mayo Clinic. Cancers of the rectum and rectosigmoid were not included.

The same histologic forms were found as in the stomach, namely, the cylindrical cell adenocarcinoma, the small cell, colloid medullary form, the hard scirrhous variety and the mucoid or colloid carcinomas. The medullary cancers grow rapidly and tend to grow deep. The scirrhous cancers tend to encircle the bowel, producing the napkin ring form and ulcerate only superficially. Lane considers the most common locations of cancer of the colon to be: (1) the ascending colon about the level of the crest of the ilium, (2) the transverse colon near the hepatic flexure, (3) the splenic flexure, (4) the descending colon about the level of the crest of the ilium, and (5) the junction of the pelvic and iliac segments. Metastases from cancer of the colon are much less common than metastases from the stomach, probably because of the distribution of the lymphatics of the organs. In 50 per cent of all cases coming to autopsy the growth in the colon had remained local.

The author prefers the opaque enema since the barium meal has many disadvantages to it, one for

example (1) its tendency to accumulate in the cecum or rectum (2) the repeated observations required to visualize the intervening segments, and (3) the straining out of the barium meal in an irregular fashion suggesting pathologic alterations in contour. The routine at the Mayo Clinic is as follows:

The patient is not allowed to have any supper the evening before the examination and is given 6 cc of castor oil. The next morning the bowel is cleared out with a sapsode enema. The enema is made up of 25 gm of barium sulphate held in suspension by condensed milk and mucilage of acacia, the total quantity being 2 liters. This is warmed to body temperature and administered to the patient in recumbent position, with the container elevated from 5 to 1 m above him. The enema is watched as it fills the colon, and the abdomen is manipulated, if necessary to assist observation. One or more plates are made for confirmation of the findings and record, but a diagnosis is never attempted on the roentgenographic findings alone.

Röntgenological signs of cancer of the colon are the filling defect and obstruction to the enema. The filling defects vary widely, depending on the size and character of the growth. They are due to the intrusion of the tumor into the intestinal lumen, infiltrative stiffening of the intestinal wall, and local spasm excited by the lesion.

Incomplete obstruction cannot be differentiated from a slowing of the enema due to ordinary causes. Surgeons at the Clinic have observed that a marked stenosis may be found at operation when the roentgenologist has not noted any obstruction to the enema. In complete obstruction, the enema may terminate as a conical projection or be rounded off bluntly. If the stenosis is marked, the bowel proximal to the lesion may show some dilatation.

Palpation for masses is also part of the roentgenological examination, in order to determine not only their presence but also their relationship to the changes observed in the contour of the colon. A mass corresponding to a filling defect or to a point of obstruction increases the certainty that a lesion of the colon is present.

Slight local irregularities due to localized spasm, haustral loops, or external or internal pressure are normally so common that it is small to regard them seriously yet they must be excluded if correct roentgenographic interpretation is to be given. This can be done by repeating the examination after the administration of antispasmodics. Apparent filling defects may be produced also by gas in the bowel or by pressure of the spine on the transverse colon. Tumors outside the colon may incidentally outline but manipulation will usually exclude them.

It is very difficult to differentiate between cancer of the cecum and tuberculous, actinomycotic, and appendicular abscess. The absence of tuberculous from the lungs is of some value in excluding this lesion in the colon. Diffuse ulcerative colitis is rarely mistaken for cancer but if the condition is localized

in extent, it cannot be distinguished from the latter with any degree of certainty. Peridiverticulitis also simulates cancer very closely but may be excluded if barium-filled diverticula are demonstrable. Adhesions which cause obstruction or a filling defect are very rare.

Finally the colon may be the site of lymphomatous or benign tumors, from which cancer cannot be distinguished. In 9 per cent of the cases reported by the author, the roentgenologist failed to discover any sign of a lesion, probably because small irregularities of the colon are usually meaningless.

The author summarizes his findings in the series of cases and his impressions are as follows:

More than 90 per cent of cancers give definite roentgenological evidence of a lesion.

2. A diagnosis of cancer cannot be made on roentgenological findings alone.

3. Cancers of the cecum are more apt to escape detection than those in any other part of the colon.

4. Ring cancers are the easiest to detect.

5. All cases of carcinoma of the colon should be explored, regardless of the roentgen-ray findings.

Fowler H. The Appendix and Its Role as Misquander. *Med Times*, 9:314, 57.

In the pre-operative care of ppendicitis cathartics is contra-indicated, nothing should be given by mouth, the patient should be placed in the Fowler position, the bowel should be cleaned by a low sapsode enema, and morphine should be withheld to avoid masking the symptoms.

It has been the author's practice to maintain the patient in the Fowler position before and during operation and through the convalescence. The patient is even transported to the operating room in this position.

A tabulation of eighty cases treated in the period from 1898 to 1915 shows that, irrespective of the type of treatment, the general mortality of appendicitis with peritonitis has been reduced by 55 per cent. The average mortality was 66 per cent. When postural drainage was employed it was 46 per cent, and when postural drainage was not employed, 8 per cent.

The white cell count and the differential count are of great importance in diagnosing the progress of the lesion. A case is reported which suggested renal stone. On the basis of the history and the laboratory X-ray and cystoscopic examinations, it was decided that there were bands or veins constricting the ascending colon. At operation the appendix was found to be retrocecal and wound around the ascending colon. Its tip was just below the liver. The cecum was practically absent, the terminal ileum being inserted into the colon in the form of funnel-like expansion.

Abnormalities of position of the caecum are the most frequent cause of aberrant types of ppendicitis.

I conclude the author's articles on congenital

and colon from the literature and reports second case briefly
I EDWARD BISHOP M D

Speed, K. Appendicitis in Children 14 Years of Age and Under. *Am J Surg* 9 3, 1914, 97

The author gives a comprehensive study of 313 cases of appendicitis in children 14 years of age and younger. There were 175 boys and 138 girls. In 87 per cent of the cases the condition was acute and in 1 per cent it was chronic. The author believes that many chronic cases are unrecognized as to the parents the symptoms are misleading.

Many of the chronic cases reviewed were discovered after the administration of an overdose of castor oil, a prolonged period of constipation, or diarrhea, which led to acute manifestations. The pathology in these cases is decidedly uncertain and unreliable. In three cases in this series foreign bodies were found in the appendix, and in 10 per cent there were fecoliths. Fourteen patients had diarrhea either before or after the operation, in these the prognosis was poor. Bacteriological examination showed only the usual intestinal flora. In some cases apparently metastatic infections such as mastoiditis, parotitis, and other cuto abscesses, particularly in bones, have followed appendicitis. In about 5 per cent of the appendices examined, the streptococcus hemolyticus was found. The author suggests that it may have reached the appendix by the blood stream. Because of the comparatively slight development of the omentum in children, the omentum usually cannot be depended upon to render much assistance in walling off the infective process. In the author's series of cases general peritonitis was present on admission to the hospital in 6 per cent, an intra-abdominal abscess was found in 26.8 per cent, the appendix had ruptured in 27.7 per cent, and the appendix was gangrenous, either ruptured or floating in pus in 3.3 per cent.

The blood count did not give great deal of information as the leucocyte count was high in the cases of unruptured appendix as well as in those in which rupture had occurred. However a low count was found nine times as frequently in the former as in the latter.

There were nineteen deaths, a mortality of 6 per cent. All of the patients who died had had catarrhs before their admission to the hospital. Eighteen of these had gangrenous or ruptured appendix, and nine had general peritonitis. In two cases drainage was apparently inadequate. Four deaths occurred late following secondary operation from one to ten months after the first. One death was attributed to ether anesthesia. Of the nineteen fatal cases, eight were treated by drainage alone, while in eleven the appendix was removed and drainage then instituted.

The symptoms varied considerably. Besides cramp-like abdominal pain, vomiting, abdominal tenderness becoming localized in the right iliac fossa, and fever many of the patients experienced a chill at the onset. 80 per cent showed sweat-

ing, and many had urinary symptoms, cough, constipation, and diarrhea.

In cases of abscess, the author favors drainage as soon as the condition is recognized. In some of the cases with abscess and vomiting intestinal absorption is suggested. Pain is of little diagnostic or prognostic value. In many cases with an overwhelming infection there is little pain. After the appendix ruptures, there is frequently as in adults, a subsidence of the symptoms which may be misleading. When the child will not permit abdominal palpation the abscess may be felt through the rectum.

Ninety-five per cent of the children had been given a cathartic, usually castor oil, before admission to the hospital. The author believes that in 50 per cent of the cases this is responsible for rupture before the patient is seen by the surgeon. He believes also that practically all cases should be operated upon immediately. The technique must be flawless as the patient's resistance is lowered and he is susceptible to secondary infection from contamination. In cases of appendiceal abscess it is the author's practice to drain toward the iliac crest unless the mass points down toward the rectum, when rectal drainage can be instituted. The surgeon should not attempt too much. Frequently it is advisable merely to institute drainage. The abdominal wound is often left wide open especially if peritonitis is evident. In many cases Mikulicz or modified Harris drain is used.

Drainage over a long period of time is essential unless the drainage of pus ceases. In addition to free drainage, the Fowler position and the maximum ingestion of fluids are essential in cases of peritonitis. Death results usually from a combination of shock and toxemia. HARGIS M CAMP M D

McConnell, A. A. and Hardness, T. G. Abnormalities of Fixation of the Ascending Colon. The Relation of the Symptoms to the Anatomical Findings. *Brit J Surg* 1913 2, 53

Stimulated by Waugh's article on the mobile ascending colon and realizing the possible importance of Waugh's conception in abdominal surgery, the authors have decided to observe the ascending colon in every abdominal case and to determine whether its anatomical condition is in any way responsible for the symptoms or disease found. The report of the results of this investigation is preceded by a description of the normal ascending colon, the manner of its development, the variations from the normal which the authors have encountered, and the symptoms associated with these variations.

In cases of mobile ascending colon the authors have not performed colectomy unless a definite anatomical connection could be traced between the mobile ascending colon and the symptoms. In some of the cases reviewed the operation was not properly performed. In one case a carbolic swab placed in the wound after faulty closure of the peritoneum caused irritation of the peritoneal surfaces. This patient was re-operated upon twice for adhesions.

with enlargement of the liver 1 in. below the costal margin. The Wassermann reaction was positive. The patient was cured by mixed treatment.

Jaundice of laetic origin may occur (1) during the second stage of the disease (syphilitic hepatitis) (2) from acute necrotic hepatitis (3) in association with hepatic gumma or cirrhosis and (4) after arsenism treatment. Jaundice associated with arsenism treatment may be due to (1) the action of the arsenism upon the spirochetes infecting the liver or (2) arsenical poisoning of the hepatic parenchyma with resulting fatty degeneration.

The jaundice may occur during soon after or late as ten or twelve weeks after treatment. Latent jaundice is not infrequent and in the cases of jaundiced patients history of previous arsenism treatment is extremely important. Harrison states that jaundice occurs in 6 per cent of the cases of syphilis during or subsequent to treatment with medicinal preparations. Todd has observed that it occurs more frequently in the winter when the diet is rich in fats and proteins. Physical examination shows hepatic enlargement in from 40 to 50 per cent of the cases, but later in the course of the disease this tends to decrease. A decrease in the size of the liver during the jaundice is against common duct obstruction from atresia.

The disease is usually afebrile but prodromal symptoms and marked febrile reaction may be present. Occasionally the temperature may rise to 3 or 4 degrees Fahrenheit and chills, nausea and vomiting, and epigastric pain may complicate the picture. Pruritus may be distressing and abdominal tenderness located in the epigastrium or over the enlarged liver is usually demonstrable. Bile pigments in the feces may be diminished, but this is not the rule although occasionally the stools, which are usually light green in color may be clay colored. The latter is more apt to occur in the severe or fatal cases in which the condition simulates acute yellow atrophy.

The average duration of the jaundice is about four weeks but it may persist for several months. More recent writers agree that the pathology is probably that of diffuse interlobular hepatitis. The persistent presence of bile in the feces except in the fatal cases simulating cat yellow atrophy, the disappearance of the biliary substances excreted in the bile and the slow disappearance of the jaundice are against obstruction as cause of the atresia. Vanderburgh has been able to differentiate between jaundice from liver damage and that due to atresia, and his test will greatly assist in future cases in which the differential diagnosis may be difficult.

S. J. SHERMAN, M.D.

Wylin, V. Melasma with Gall-Stones (Blutige Stühle bei Gallensteinen). *Casus heb. heb.* 93
Jan. 30

The relationship between cholelithiasis, duodenal ulcer and pyloritis explains why in cases shown

ing symptoms of cholelithiasis, melasma may appear and render the diagnosis of cholelithiasis doubtful. This finding will always be explained by operation. The author reports a case in which intestinal hemorrhage followed severe calculous colic. At operation the suspected duodenal ulcer was not found, as it had probably healed in the six week interval between the hemorrhage and the operation.

KROCH (Z)

Peters, G. M., and Bockus, H. L. A Study of the Bile Obtained by Non-Surgical Biliary Drainage, with Especial Reference to Its Bacteriology. *Am. J. V. Sc.* 93, div. 485

Hollander, E. Experiences with Non-Surgical Biliary Drainage (Meltzer Lyon Test). *Am. J. V. Sc.* 93, div. 497

The method of biliary drainage instituted by Lyon and based upon Meltzer's hypothesis is a useful and practical procedure. The bile obtained thus was derived from the common bile duct, the gall bladder, the hepatic duct, and the biliary capillaries in the order named.

The condition of the gall bladder and the bile ducts can be recognized by microscopic and bacteriologic study of the bile. Because of its bland action on the duodenal mucosa, 5 per cent peptone is suggested for diagnosis instead of strongly hypertonic magnesium sulphate solution.

In chronic cholecystitis normal reaction may be present. The findings obtained by non-surgical biliary drainage should be correlated with other clinical data.

SMUTEL KARY, M.D.

Bernsow, E. L. The Change in the Blood Picture Following Splenectomy. Result of the Beginning Disturbance of Internal Secretion (Die Veränderung des Blutbildes nach Splenektomie eine Folge der einsetzenden Störung der inneren Sekretion). *Klinisch-chemische Woch.* 9, iv. 8

In the main the results of investigations of the blood in man after splenectomy have been uniform. All investigations from the first by H. R. Mann and V. Quercius to the last, the very complete work of Schulze showed that in all persons who had undergone splenectomy the number of lymphocytes increased and that after approximately five months eosinophilia (81 to 6 per cent) appeared. Therefore it may be considered as proved that the spleen does not take part in the formation of mononuclear and polymuclear cells. The increase in the number of the lymphocytes is explained by Kurloff and other investigators as follows:

The spleen participates intensively in the formation of lymphocytes but if it is removed, as increased demand is made upon the lymphatic glands and a compensatory glandular hyperfunction takes place, which manifests itself anatomically by swelling and enlargement of the glands.

It can be explained that the removal of the spleen, which forms only a small part of the lymphatic system, will forthwith increase the hyperfunc-

abdomen is lax and soft and without tenderness upon pressure and bimanual palpation. As the exudate will be situated in the perimetrial tissue and will not rise higher than the upper edge of the true pelvis, there will always be some of percussion between it and the some of exudate in appendicitis. An appendicular abscess varies in situation according to the situation and length of the appendix.

The symptoms of suppurative pelvic peritonitis are never as acute as those of acute appendicitis. The history also discloses the fact that the patient has not been in good health, has had discharge for some time or that her symptoms date from visit to a midwife. There is usually dysuria associated with the signs of local peritoneal irritation and little if any fever.

The perimetrial exudate, if very old may be easily confused with perimetrial exudate especially if it extends into the broad ligament toward the uterus.

A retro-tuberculous hematocoele following a ruptured tubal pregnancy may simulate pelvic appendicitis but in the latter there is always tenderness over McBurney's point and no pain in the ovarian region; the cervix is not softened and the uterus is not enlarged. Pelvic appendicitis may simulate a twisted pedicle but in the latter a tumor mass usually be outlined and fever at the onset is rare.

The mortality of pelvic appendicitis is probably no greater than that of the acute type, but the symptoms are usually more severe and the indications for intervention are more urgent.

There is some question as to whether in pregnancy the ligament of Claude is put under tension or is relaxed but there is evidence that pregnancy acts mechanically to favor the recurrence of attacks of appendicitis in women who have adhesions between the appendix and the genital organs. It is possible that adhesions between the appendix and the tube may be cause of it in pregnancy.

Roscoe Jensen, M.D.

Corre, G. and Jendrich, D. Pelvic Varicocele (Contributions to the study of the female pelvis). Gynecol. Abstr. 9:3, 1913.

The authors state that although pelvic varicocele as described by Richet and Devais more than sixty years ago it has not received the recognition it deserves. In 650 laparotomies they found several typical cases but only 10 of these could have been diagnosed before operation. On the other hand in 18 recent cases diagnosed as pelvic varicocele the condition was not found at operation. Secondary varicocele does not require any individual clinical or therapeutic attention as it will disappear after the causative factor has been removed.

Pelvic varicocele is usually found in women in the early thirties who have had several pregnancies and more or less pelvic congestion since puberty. The symptoms are pain in the lower abdomen and around the kidney, which extends down the legs, some of weight in the pelvis and more or less constipation.

rectal tenesmus. Walking, standing, defecation and sexual intercourse increase the symptoms. They become more severe also just before the menstrual period but are relieved by menstruation. With irritation of the clitoris there is increased sexual desire but at the same time there is true dyspareunia. The menstrual flow is increased and prolonged and often appears twice monthly. In many cases there is watery leucorrhoea.

Upon examination the uterus is found to be enlarged and usually in retroversion. A pathognomonic sign of the condition is a soft, compressible mass in the lateral sides of the cul-de-sac which is noted when the patient is standing but disappears when the recumbent position is assumed.

Of the authors seven cases, only two were operated upon more than two years ago. In every case the symptoms disappeared after resection of the utero-ovarian veins.

While medication may relieve the symptoms for a time the only cure is operative interference. The operation of choice is resection and ligation of the veins in the lumbal-ovarian ligament. In the authors' opinion, this will not harm the ovarian function. The position of the uterus should be corrected but nothing should be done to the tubes or ovaries unless they are diseased. Roscoe Jensen, M.D.

MISCELLANEOUS

Curris, A. H. The Management of the Female Urinary Bladder After Operation and During Pregnancy. A Further Study of Residual Urine in Its Bearing on Urinary Tract Disturbances. *J. Am. Med. Ass.* 9:3, 1913.

The author emphasizes the fact that the normal bladder is highly resistant to infection and that virulent bacteria tend to do no harm unless there is the added complication of residual urine. It is this factor that accounts for many otherwise inexplicable infections of the urinary tract following operation and developing during pregnancy. Without catheterization few infections result, but it is often necessary to catheterize to prevent over-distention. Residual urine does not usually follow one or two catheterizations, but is very frequent when catheterization is done repeatedly.

The author's plan of treatment was studied in 593 female patients subjected to major surgical operations, excluding operations involving the genito-urinary tract and conditions which might involve it. Sixty-six per cent of the patients required no catheterization, 11 per cent required it once, 5 per cent required it twice and 17 per cent required it three or more times. Of the 66 per cent not requiring catheterization several were tested for residual urine but this was found in less than 1 per cent and in none was there any urinary tract infection. Of the 1 per cent (87 patients) requiring one catheterization for distention residual urine was found in 6 per cent, but in the absence of infection disappeared promptly. Of the eighty-eight per

tients catheterized twice 87 per cent had residual urine and a few had slight infection which disappeared more or less promptly.

Of the 569 patients who were catheterized many times, residual urine was found in 64 per cent. Return of the power of complete evacuation of the bladder usually requires from four to eight days, the amount of residual urine decreasing gradually.

1. The plan of treatment followed by the author the catheter is used only when necessary for the relief of distention. If the catheter has been employed only once or twice no further treatment is indicated unless symptoms of retention or infection appear. If more than two catheterizations have been necessary the patient is catheterized daily immediately after one urination until the residual urine has disappeared. Residual urine of less than 100 cc is considered normal if free from pus. Hexamethylenamine is given in quantities sufficient to reveal for maldehyde in the urine.

In the author's opinion many of the cases of pyelitis in pregnancy may be due to ascending infection from residual urine in the bladder. Many women with this condition give history of having accustomed themselves to resist voiding for long periods of time. Others mention inability to empty the bladder completely after the onset of pregnancy or after the uterus rises out of the pelvis. In still other cases the presence of temporary cystocele may be responsible.

The laboratory examinations showed scattered staphylococci and diphtheroid bacilli in the urine of the catheterized patient, while in the urine of those catheterized repeatedly, colonies of bacilli of the colon group were found in addition. The patient with residual urine showed the greatest number of leucocytes and bacteria but these disappeared with the disappearance of the residual urine.

The conclusions drawn by the author are as follows:

1. The catheter should be used when necessary to relieve distention both because of the pain and because if the distention is not relieved there is danger of the destruction of kidney tissue by back pressure.

2. Postoperative patients not requiring catheterization quickly return to normal without urinary tract infection even though some residual urine may be present.

3. Patients who require repeated catheterizations will have no infection provided they have daily test for residual urine until this is no longer present.

4. It is dangerous to stop the use of the catheter suddenly with the advent of spontaneous micturition because this is usually followed by a period of several days of residual urine which, if contaminated, is the chief cause of postoperative cystitis.

5. All pregnant women who show undue frequency of urination or whose urine contains pus should be watched for residual urine as a precaution against the pyelitis of pregnancy.

ROSCOE JENKINS, M.D.

McGill, J. A. The Treatment of Gonorrhea in Women. *Thorp Gaz* 1925 31, 1000, 1019.

Acute cases of gonorrhea are seen by the physician relatively seldom. The author saw only one such case during the last year at the venereal clinic of the Philadelphia General Hospital. In the acute stage the diagnosis is easy and treatment should be begun immediately. The primary source of infection is always in the cervix and for this reason douches which may relieve congestion will not destroy the organisms. Since all germicides do more harm than good, he advises simple saline solution for the vagina. Of chief importance in the treatment is the cervix. This should be first cleaned with sodium bicarbonate or hypochlorite solution and then dried with hot air (dental cavity drier) or cotton swab, with care not to treat the canal. The author then applies a 1:1000 warm aniline gentian-violet solution which penetrates deeply and kills or prevents the growth of the gonococcus. He considers the use of bichloride of mercury and lysol pernicious.

In order to change the conditions favoring the growth of the gonococcus, suppository formed from half cake of yeast is inserted into the vagina each night. After the cervix and vagina are free from gonococci the penetrating discharge, which McGill considers due to change in the vaginal flora, is stopped by keeping the vagina dry. This is accomplished by filling the vagina at night with Faller's earth and washing it out again in the morning.

McGill does not find that the urethra and glands of Bartholin become infected as frequently as is to be assumed from most textbooks. For infection of the urethra and Skene's glands he advocates argyrol or protargol. When Bartholin's glands are infected it will be necessary to open the canal and treat the tract directly.

The difficulties in treating chronic cases are emphasized. Repeated examinations after several menstruations must be made. For chronic infection of the cervix McGill favors the actual cautery with the temperature high enough to produce a slough but not a char. Postoperative care must be given to prevent stenosis. Skene glands may be laid open and cauterized with wire or dissected out. If radium is used for chronic infection of the cervix it should be employed in small repeated doses. Sturmdorf's tracheloplasty may also be done.

In conclusion the author emphasizes the importance of not overtreating acute cases and the futility of local treatment in chronic cases.

ROSCOE JENKINS, M.D.

Maxwell, A. F. The Results of Radium in Gynecology. *California State J M* 1925, 22, 55.

In the beginning, radio activity was accepted by the medical profession almost universally as panacea for all neoplastic diseases. Today the tendency is toward sane evaluation, the application of radio-activity being clearly defined.

The material in this study was obtained from the Women's Clinic exclusively and covered the years 1916 to 1921 inclusive.

There are 68 cases of carcinoma of the cervix, 10 of carcinoma of the body. Briefly the technique consisted in the use of the bare tube containing either the salt or the emanation, screened by 1 mm. of silver and 1 mm. of brass and encased in sterile rubber. Crossfire, as obtained by placing capsules in the lower uterine cavity and against directly in contact with the cervix and parametrium. Bare tubes were tried with but very little success except in cases of vaginal metastases. Gauze strips and rubber dam were packed firmly into the vagina to protect the bladder and rectum and the latter were kept empty by catheterization and enemas. The

average dosage was from 3,000 to 5,000 mms. or mc hrs. given in single dose or more. Then, 5,000 mc hrs. and repeated in forty-eight to seventy-two hours, 60 to 80 mc being used.

For suitable working basis the cases are classified as early and operable and borderline and inoperable. Of 68 cases of cervical carcinoma twenty-three are recurrences and eighty-five were primary. Of the latter eighty-two were given radium treatment only and three were operated upon later. Of the forty-two men with inoperable carcinoma, thirty-one (66 per cent) succumbed within a year and four have lived 2 to 3 years and have shown marked improvement. In one of the latter the condition was so altered by the radiation that an operation as performed subsequently and the patient is free from signs of malignancy four years later. Intense postoperative reaction as done also. Ten per cent of the patients in the terminal stages have survived over three years and these years are made bearable. Of those with borderline condition 50 per cent are alive some of them as long as 4 years after the treatment. Three or so benefited that operation is rendered possible. In this type of

Bumr reports a five year cure following radium treatment 51 per cent of a series of twenty-two cases. Two of the very early cases presented definite contra-indications to operation, one patient died a year after raying without signs of carcinoma, the other shows no evidence of malignancy after three years.

The great majority of recurrences are not recurrences but a proliferation of tissue not removed at the time of operation. Fifteen of twenty-three women with such a condition are dead and one of the five who are living is clinically well after three and one-half years. Two of five women radiated prophylactically after hysterectomy are well after five and six years respectively.

Carcinoma of the body of the uterus is treated as a surgical condition. One woman with this condition died of recurrence and five are living three as long as four years after treatment. Six cases of carcinoma of the ovary, two of carcinoma of the clitoris, and one of carcinoma of the urethra have been treated without apparent result.

The hemorrhages associated with adolescence and fibrosis of the uterus are effectively controlled by radium. In cases of myomata and fibroid polyps the treatment is now restricted to growths confined to the pelvis in women near the menopause and to non-submucous polypoid tumors, malignancy and inflammatory pelvic reaction can be excluded. Endocervicitis was alleviated in all four cases. One case of chorionepithelioma received 3,450 mc-hrs. of treatment without any apparent effect on the growth.

In summarizing, the author states that radium has a definite place in gynecological therapy. Death is postponed. Operable cases should be operated upon after radiation. Cancer of the uterine body is surgical. The bleeding myomata (selected cases), the myopathies, and some of the leucorrhoeal discharges can be satisfactorily controlled with radium.

A. JAMES LARSEN, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Spiegel E. A Routine Treatment for Hyperemesis Gravidarum *Am J Obst & Gynec*
9 3, 42

It is of great importance in instituting the routine treatment that the patient's husband and family be impressed with the fact that the condition is very serious and that a favorable outcome, even the patient's life, depends upon their co-operation.

The patient room should be flooded with sunshine and fresh air and the family and husband should be excluded, especially the husband whose presence once arouses the sex instinct in the patient and reflexly causes emesis. The administration of food, and even of water by mouth should be stopped at once.

In the author's cases the daily routine is begun at 7 a. m. by irrigating the large bowel with gallon of warm solution containing 10 rounded tablespoonsful of sodium bicarbonate. The solution is introduced slowly through No. 30 catheter and when the patient strains she is allowed to expel it alongside the catheter. More solution is then run in and when the final pint has been introduced the catheter is withdrawn. It is hoped that the patient will retain and absorb a considerable part of the solution as in this way fluid will be supplied to the body and the acids will be somewhat corrected by the sodium bicarbonate.

At 8 and 10 a. m. and 4 and 8 p. m. 250 c. cm. of the feeding solution are slowly introduced into the rectum through a No. 30 catheter with glass funnel attached, the patient lying in the left lateral position with the hips elevated and being kept in that position for half an hour after the introduction of the fluid.

The feeding solution, which is aimed to body temperature before each introduction, is composed of 50 gm. of glucose, 100 c. cm. of trophine or pinocetone, 50 gm. of sodium bicarbonate, and enough water to make 1,000 c. cm. This amount is sufficient for one day. Sixty grams of sodium bromide are added to each dose of the solution just before its introduction, and if the patient is restless, 30 gr. of chloral are dissolved in the 8 p. m. feeding. As the patient improves, the amount of sodium bromide is gradually reduced.

From the beginning, an ampoule of corpus luteum extract is administered once or twice daily intramuscularly or intra-eneously until erythema is detected that sufficient has been given.

After three days of this régime the treatment is supplemented by the intra-eneous administration of 500 c. cm. of sterile 1 per cent glucose solution. The glucose relieves the carbohydrate deficiency

caused by the demands of the fetus upon the mother and the lack of it in the diet that she has been able to take. It will be absorbed directly by the liver and will aid in regenerating the damaged liver cells. If the destruction has not gone too far.

The rectal treatments are continued for the succeeding days, and on the sixth day a second intravenous injection of glucose is given. The rectal treatments being continued, gastric lavage is practiced on the eighth day with 35 gal. of sodium bicarbonate solution containing rounded tablespoonful of the soda, and at the end of the lavage 3 pt. of the solution is poured into the stomach through the tube. This is generally retained.

The administration of food is begun tentatively on the ninth day the patient being given Holland rusk or shredded wheat biscuit twice a day.

The cereals are slowly added in the succeeding days, the rectal feedings being gradually reduced in number as the patient is able to retain the food taken by mouth.

This routine includes well recognized measures in the treatment of hyperemesis and forms the main basis for the treatment of every case. Additional measures are used in conjunction with it, if necessary. Adrenalin solution advocated by some may supplement or take the place of the corpus luteum solution, or the latest innovation feeding by the duodenal tube as advocated by Paddock, may be added to the treatment.

F. L. CORWELL, M.D.

Stroganoff My Improved Method for the Prophy-
lactic Treatment of Eclampsia *J Obst & Gynec*
Brit Emp 1913 xxx

Stroganoff has had wide experience with eclampsia and described a method of treating it about twenty years ago. At first his method had a mortality of 10 per cent, but in the last twelve years he has so improved it that he is nearly always able to save the mother and has greatly reduced the infant mortality. He states that in this condition toxins formed in the mother's blood irritate the central nervous system, and particularly the vaso-motor center. This irritation causes spasm of the blood vessels and an increase in the blood pressure accompanied by headache, changes in the eyesight and hearing and epigastric pain which terminate in convulsions with loss of consciousness. The spasm of the blood vessels of the kidney causes sharp change from oliguria to anuria and thrombi and casts appear in the urine. The toxic elements causing the irritation are the excretory matters which enter the mother's cine. The fact that eclampsia appears more often during delivery seems to indicate that

the myometrial cells enter the blood during labor and that their tenacity is increased by the labor pains. Immediate delivery appears to be of little aid in counteracting this condition and may often be harmful.

In the treatment efforts must be made first to prevent convulsions as these increase the amount of toxins in the blood. Elimination of the toxins through the skin and kidneys must then be stimulated.

Next in importance to the arrest of the convulsions is the combined administration of morphine, chloral hydrate, and chloroform. These drugs calm the patient, cause sleep and prevent spasm of the blood vessels. To reduce the concentration of the toxins in the blood, venesection and the introduction of fluid are beneficial.

In the other care of the patient all causes of irritation must be removed. Light, noise, and manipulations must be avoided. Examinations should be done under chloroform.

The narcotics Stroganoff administers in the following order:

At the beginning of the treatment hypodermic injection of $\frac{1}{2}$ gr of morphine hydrochloride is given under chloroform and repeated after three hours. At the end of one hour 30 gr of chloral hydrate in 200 to 300 cc of saline solution are given by rectum or if the patient is conscious, by mouth with 100 cc of milk. This is repeated in seven hours, thirteen hours and twenty-one hours. It may be administered without chloroform if there has been no convulsions or prodromata for twelve hours. Then the patient receives from 75 to 35 gr of chloral hydrate and from $\frac{1}{2}$ to $\frac{3}{4}$ gr of morphine in one day, together with 500 cc of milk and 500 cc of saline solution. If forewarnings of a convulsion, such as increased headache, increased blood pressure, twitches, and restlessness are evident chloroform is indicated the minimum dose is 10 to 15 cc.

If the patient has been free from convulsions for twenty-four hours and has not yet been delivered, she is given chloral hydrate every eight hours. The prognosis is favorable if convulsions do not appear for twelve hours, and much more favorable if they remain absent for twenty-four hours.

Stroganoff reports 30 cases of eclampsia with four deaths of moribund patients a mortality of 7 per cent. There are no deaths in cases which had not been neglected. H. W. Fink, M.D.

Braden: Fibromata Complicated by Pregnancy
(Les fibromes compliqués de grossesse) *Presse med*
Par 14 3 1911 385

The author limits his study to fibromata complicated by pregnancy and does not take up their relation to parturition or the puerperium. Cases of fibromata complicated by pregnancy are relatively rare. In 1,000 of the author's cases of fibromata larger than an egg this complication occurred in only eight.

The most common site of fibromata present during pregnancy is the body of the uterus. Usually they are subserous, occasionally interstitial, and very rarely submucous. As a rule they contain some fibrous tissue but are made up for the most part of uterine muscle. The interstitial and submucous fibromata have the most marked growth because of the hypertrophy of the muscle containing them.

The fibromata soften with the softening of the uterus and the pedunculated fibromata which fall into the pouch of Douglas frequently have the consistency of cysts. When a fibroma is situated in the fundus it rises with the uterus, but when it is situated at one of the horns, the uterus usually follows the tumor. Retroflexion of the uterus may be caused by a fibroma on its anterior surface or by traction or under development when the fibroma is on the posterior wall.

Degeneration of fibromata is much more common during pregnancy than at other times, the most common this being what the English call red degeneration. When this has occurred the tumor is soft and usually yellowish red. Microscopic examination of the muscle fibers shows zones of necrosis and marked fatty degeneration.

The difficulties in the diagnosis are numerous. In certain cases a tumor on the anterior wall of the uterus may seem to disappear during the course of pregnancy. Torsion of a pedicle or necrobiosis of a fibroma may cause such symptoms as pain, vomiting, or fever suggesting appendicitis, pyelonephritis, or ectopic pregnancy. Other complications may be caused by compression of the bladder, rectum or ureters.

If complications arise, no attempt at an exploratory laparotomy should be made. In 60 per cent of the cases a single fibroma can be excised without interrupting the pregnancy. In cases of multiple submerged fibromata subtotal hysterectomy should be performed. If the patient is at term nothing need be done unless labor is obstructed or there is elevation of the temperature. If the temperature rises, hysterectomy is indicated to prevent infection of the fibroma and the peritoneum.

If the fibroma fills the pouch of Douglas a caesarian section should be performed just before the beginning of labor. After delivery a myomectomy should be done if possible, otherwise a hysterectomy.

In twenty-seven cases operated upon by the author there was only one death and this was due to pneumonia. Of seven cases operated upon before term the pregnancy was interrupted in only one.

ROBERT JARROW, M.D.

Brady L. A Clinical Study of Ectopic Pregnancy
Bull Johns Hopkins Hosp Balt 9 3 1911 5

The average age of fifty women operated upon for ectopic pregnancy at the Johns Hopkins Hospital, during the years from 1917 to 1922 was 35 years. The two oldest were 39 and 38 years of age and the two youngest 7 and 9 years. There were thirty-three white and seventeen colored women. As only

one colored patient was admitted to the hospital to three hits patients, it is evident that ectopic gestation occurs somewhat more frequently among the negroes.

The ectopic pregnancy was the first pregnancy in only six cases. A previous pelvic infection was ruled out positively in only seven cases (4 per cent). In twenty-four of the fifty cases there was a history of missed menstrual periods, usually one or two; the largest number missed was three. Irregular uterine bleeding had been present in thirty-seven cases and absent in thirteen. The duration of the menses varied from a few days to five months; the average was one month.

There was a history of pain in every case except two. In thirty-eight, the pain was severe, in ten slight. Fainting occurred in only three cases. Tubal rupture and one case of tubal abortion following occurred in nine (18 per cent).

The average temperature was 99.4 degrees F. Nineteen patients had a temperature above 99 degrees and six a temperature of 1 degree or higher. In none of the cases was the temperature below 98 degrees.

The average pulse rate was 104, sixty-four per cent of the patients had a pulse rate above 90. On admission, the pulse rate of one woman was 50, that of two others 120, and that of six others 180.

A striking change in the respiratory rate occurred in 6 of the 50 cases, that of a woman in profound shock who on admission was breathing only six times to the minute.

The leucocyte count averaged 10,000. In sixteen instances the count was above 10,000. The highest counts recorded were 15,000, 24,000, and 30,000. The average hemoglobin content was 61 per cent. In fourteen cases it was below 50 per cent; in seven, below 40 per cent; and in three, below 30 per cent (8, 27, and 24 per cent). The blood pressure was below 70 in nine cases. The low readings were 35 systolic with 50 diastolic and 75 systolic with 55 diastolic.

The general condition was recorded as good in fifteen cases, as fair in thirteen, as poor in 16, and as critical in three. In the other instances there was no record on this point, presumably the women were in good or at least fair condition.

In nine cases the abdomen was distended. Tenderness was present in forty-four cases, but muscle spasm in only nine. Percussion revealed shifting dullness in the flanks in four cases. In no instance was there bluish discoloration of the umbilicus.

Vaginal bleeding was present at the time of examination in twenty-seven cases. Pelvic tenderness was present in all except seven. In thirty it was moderate and in thirteen severe.

In thirty-six cases (72 per cent) the correct diagnosis was made before operation.

The tube and ovary were removed in thirty cases and the tube alone in nineteen cases. In the case of a pelvic pregnancy only a exploratory laparotomy was done.

The convalescence was uneventful in forty cases and stormy in ten. Abdominal distention occurred in six cases and prolonged vomiting in 6.

Twelve infusions and seven transfusions were given. As a rule the infusions were not begun before the operation because it was thought that raising the blood pressure would cause further bleeding into the abdominal cavity.

Only when blood crept into the pelvis was the pelvic examination of much aid in determining whether the pregnancy had ruptured or not. The abdominal examination and the patient's general condition and history were of greater importance.

All of the patients made a complete recovery.

On reviewing earlier records of the hospital it was found that an operation for ruptured extra-uterine pregnancy was performed in February 1913. The sac contained a badly macerated fetus and 100 ccm of erythral pus. Although abdominal and pelvic drainage were both used, the patient died of general peritonitis. Between February 9, 1913, and September 1922 there were seventy-one consecutive successful operations. C. H. D. M., M.D.

Farrar, J. A. G. A Case of Erosion of the Rectum by an Ectopic Placenta. *Lancet*, 1923, col. 795.

The author reports a case of tubal abortion with erosion through the rectal wall. Considerable rectal bleeding occurred. At operation the ruptured tube with the mole was found in the pouch of Douglas. The mole contained fetus 16 millimeters long. The pouch of Douglas was closed and temporary colostomy was made. The patient recovered. The colostomy was closed on the fifty-ninth day.

Roscoe James, M.D.

LABOR AND ITS COMPLICATIONS

Pouillot, L. and Truchard, J. A Critical Review of Fifty-Three Cases of Rupture of the Uterus Following the Use of Hypophyseal Preparations (Exam critique de cinquante-trois observations de rupture utérine après emploi de préparations hypophysaires). *Rev. franç. de gynéc. et obst.* 1923, 19:40, 45.

From a review of fifty-three cases of rupture of the uterus following the use of hypophyseal preparations, which were collected from the literature by Rucker and Haskell the authors come to the conclusion that pituitrin should be used only when the pelvis is normal, the longitudoinally presented fetus is completely engaged, the cervix is soft, the lower segment is effaced, the uterine musculature is unrelaxed by frequent pregnancies or cesarean section, and cardiac and renal complications are absent.

Polak, J. O. Dry Labor. *Am. J. Obst. & Gynec.* 1923, 19:428.

The author divides cases of dry labor into three classes. The first class are those in which rupture of the membranes occurs before labor begins.

When the soft parts are prepared, the head is in the brim, and the head and pelvis are presumably normal, nothing should be done as neither the child nor the mother suffers any injury from ruptured membranes so long as the mother is not inactive and the cervix is not infected by repeated vaginal examinations or manipulation. The egress of the fluid is more or less effectively blocked by the ball of the hand. Spontaneous labor will usually occur in due time and should be well established before any adjunct to force or dilation is considered. Surgical interference is justifiable only in the cases of old primiparae in which the head is of paramount importance from legal standpoint.

The second class of cases of dry labor are those in which the membranes rupture at the beginning of labor, the cervix is undilated, the head or breech is engaged or engageable, and the pelvis is presumably normal. The labor should be allowed to progress for several hours or until the pains are strong and regular before resort is had to measures to aid in the dilatation of the cervix. A careful examination should then be made to determine the condition of the cervix and the progress of the labor. If the cervix is thinned out morphine scopopolamine and time will almost always effect complete dilatation even when the external os is no larger than 3 cm. On the other hand if the cervical rim is thick and unyielding the patient should be placed in the Sims position after proper surgical preparation of the vulva; unless the perineum retracted the Sims speculum and the vagina packed with boiled cotton batting moistened and rung out in weak solution of boroglyceride, one part to eight of sterile water. The tempo should be closely followed, the forceps applied over the stretched cervix, and the vagina packed firmly. This will excite uterine contractions keep the cervix in close apposition to the presenting part, soften the cervix, and smooth out the canal. A hypodermic of morphine, gr. 1 and scopolamine gr. 1/100 given at the completion of the packing will give the patient rest between pains and relax the cervical spasm. In a few hours dilatation will be completed, the plug will be expelled and the presenting part will be pushed down to the pelvic floor. Long experience has convinced the author that all the other methods of artificially dilating the cervix, inferior and fraught with great danger, the method described, dilatation is obtained without trauma and secretions are not drummed up behind the plug as is the case when the bag is used.

The third class of cases of dry labor in which there is a relative disproportion between the head and the pelvis, too much time must not be wasted on the management of the soft part dystocia. Because of the interference with the feto-placental circulation and the cerebral pressure the child's chances are lessened materially by prolonged and a fruitless trial. If progress is made is not demonstrated, the labor should not be permitted to con-

tinue longer than twelve hours as the dangers of sepsis are constantly increasing and late operations are attended by a high mortality. It is in these cases that section is to be considered. As all dry labors are potentially infected, the classical operation is not the procedure of choice.

F. AND L. COE, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Moeller, W. Mechanical Issues During the Puerperium (Mehchanischer Issues im Wochenbett) *Monatsschrift für Geburtshilfe Gynäkologie* 9 11 73

It would appear that pregnancy, childbirth and the puerperium are conditions favoring mechanical issues, but this is not the case. The statistics collected by Essen Moeller include only about 60 cases, and these only ten more can be added from the literature. It is probable that in some cases the growing uterus may stretch or even tear adhesions which are present before the pregnancy began. This assumption is supported by Moeller's new case in which a band extended from the right inguinal region and strangulated the uterus at its base.

Between the ages of 35 and 50 years, the woman's period of child-bearing issues is considerably more common in man, especially the type due to broad and adhesions. This is the more remarkable for the reason that this period is later when the condition occurs with about equal frequency in both sexes, the morbidity of diseases of the gall bladder and diabetes is greatest and gall stones are considerably more common in the female than in the male. The fact that of the 10 females with issues, 6 were between the ages of 35 and 50 years, seven had not passed through childbirth again indicates that pregnancy and childbirth prevent the development of bands and adhesion issues. (Lancet, L.)

Watson, B. P. The Treatment of Puerperal Infection with Discretion *Brit. Med. J.* 9 3 1, 1913

Although in recent years our conception of puerperal infection has undergone marked change, old methods of treatment still persist. The author states that it is no time to realize that the general principles of pathology have been applied and that the details of treatment founded upon them should require only slight modification to meet the different anatomical and physiological conditions present in any region of the body.

Much has been learned during recent years regarding the mode of invasion of infection or gammas and their spread from local focus such as the infected puerperal uterus. The organisms concerned principally in puerperal infections gain ready access to the blood stream but ordinarily do not survive. While the majority of infections of the puerperal uterus remain localized in some cases tension occurs by continuity with a spreading inflammation of the musculo-fascial layers of the uterus or about the parametrium. If the lymph

stream is invaded a general peritonitis may develop, but as a rule an inflammatory reaction in the cellular tissue of the broad ligaments and tubes, a pelvic cellulitis, results. This may or may not go on to abscess formation, but nearly always remains localized in the pelvis. In some cases, however, thrombus formation and invasion of the general blood stream follows.

After extrapelvic causes of fever in the puerperium have been excluded it is permissible to make a gentle bimanual examination. In an early case little will be found and further exploration may cause great injury. Curettage will disturb the raw surface and open new spaces for infection. As portions of placenta do little harm in such uterus, the real difficulty is that efforts are sometimes made to reach them in fits and starts. Even the intra-uterine douche is contra-indicated. Recent experience in the treatment of infected wounds has shown that the most important factor is free drainage and the fewer antiseptics and the less the interference the better. In the infected uterus the cervical canal is always patulous and drainage is assured. It may be helped by placing the patient in Fowler's position and administering such drugs as ergot, pituitrin, and quinine. An ice bag may be applied to the abdomen. A liquid diet should be given, the bowels kept open and blood cultures made at intervals.

The great majority of puerperal infections will respond to this form of treatment. If cellulitis develops, it will be evident in three or four days. A pus tube will be noted a little later. If a pus sac localizes in the pelvis it can be drained through the vagina. A pus tube should be removed only after the temperature has been normal for some time.

In cases of true bacteremia the results of intravenous therapy with magnesium sulphate, emul, salvarsan, and sera have been found indifferent. H. W. FRA, M.D.

Wagner, A. The Use of Continuous Drip Irrigation in Puerperal Fever (Zur Anwendung der permanenten Tropfenirrigation beim Puerperalfieber). *Deutsche med. Wochenschr.* 9. April 1917.

Continuous irrigation in puerperal fever should be more widely used by the general practitioner. In very severe cases with septic thrombophlebitis, etc., a marked effect cannot be expected, but in the many cases of puerperal wound intoxication and local infection of the perineum, vagina, portio, or endometrium this treatment is of great benefit. It is not intended, however, to take the place of operative procedures.

Continuous irrigation is best carried out as drip irrigation by means of a Martin glass globe. For the disinfectant, the author prefers hydrogen peroxide but states that aluminum acetate, boric acid, potassium permanganate, hypertonic salt solution, and Dakin's solution are also effective. Strong disinfectants are not desirable because of their irritating effect. As the result of the irrigation ad-

vised, the disagreeable odor ceases, the wound becomes clean, the temperature falls, the chills cease, the pain decreases, and the general condition improves. SOVERO, (2)

Nylin, A. J. Puerperal Infection: Ligature or Excision of Veins. *Med. J. Australia* 923, 4, 1917.

The author reports a remarkable recovery following ligation of the ovarian veins close to the pelvic wall in a case showing septic infection coming on with no evidence of thromboses five weeks after delivery. The good results may have been due to (1) occlusion of the veins preventing the escape of the poison from the uterus, (2) the cutting off of the lymphatics, or (3) modification of the Bier congestion treatment.

In three other cases ligation was probably done too late to obtain the best results.

For all cases of puerperal infection in which there are no definite foci of infection and the uterus is clean, the author advises laparotomy with ligation of the ovarian veins, excision of thrombosed vessels, or hysterectomy.

Two cases of extension of the ovarian veins are reported. In one, which was diagnosed as appendicitis, the ovarian vein was found to be thrombosed ten days after delivery. The other as a case of frank puerperal septicemia with streptococci in the blood, operation revealed a right salpingitis with thromboses of the right ovarian vein.

WILLIAM B. CAMPBELL, M.D.

Baldwin, J. F. The Surgical Treatment of Certain Puerperal Infections. *Am. J. Obst. & Gynec.* 9, 3, 1917.

The class of cases considered in this discussion includes the infections of the pelvic veins. Though the infection may enter at any point, phlebitis of the veins of the broad ligaments may extend into all of the pelvic veins, but is most serious when it involves the ovarian veins since these discharge on the right side directly into the vena cava and on the left side into the renal vein through the renal vein. If the involvement does not result in purulent breaking down of the blood clot, resorption takes place with prompt amelioration of symptoms and recovery as is seen so generally in that form of phlebitis so well known under the old name milk leg or phlegmasa alba dolens. If infection takes place, the disease progresses and unless there is intervention, death is inevitable.

In this type of infection the initial symptoms are identical with those of the less serious types but do not subside. As a rule there will be repeated chills, a decrease of temperature, much sweating, great prostration, rapidly developing anemia, and if the clot breaks loose and goes to the heart, the usual symptoms of infected embolism.

Vaginal examination reveals failure of normal involution of the uterus and marked tenderness on one or both sides or behind the cervix. Sooner or later mass can be felt at one of these points.

This may be well marked, or may suggest cord passing cross The thor has as felt the worm like mass mentioned by Williams While in almost all cases a careful examination will give evidence of infected vessel, it is possible that in some cases such signs may be out of reach and the diagnosis can be made only from the history and symptoms

The prognosis is practically hopeless unless the infection is of very limited extent These cases are usually chronic but occasionally fulminant case appears in which death is inevitable As in tuberculous meningitis if the patient does not die it is much more reasonable to assume that survival has been made than the diagnosis than that recovery has occurred

Bald in statistics show forty seven recoveries in sixty seven cases There can be no question as to the propriety of operative intervention or the great benefits to be expected from it His death rate could easily have been made better by refusal to operate on several of the worse cases, and yet in one of the very first prompt recovery resulted It is probable that several of the patients who died would have recovered if they had been operated upon earlier or subjected to more radical operation

The technique used in all such cases consists in performing perineal terectomy by the method described by him in a paper read before the American Association of Obstetricians and Gynecologists at Indianapolis in September 1916 The operation should not consume more than thirty minutes

The author comes to the following conclusions

About operative intervention death occurs in those rather rare cases in which the disease is limited practically to the ovarian veins ligation of the veins lessens the thrombus is feasible but the death rate as shown by Miller is not less than 60 per cent According to the outcome in six seven cases the mortality of radical operation with free drainage of all the infected veins and usually with by terectomy is little less than 50 per cent or about one half that of ligation

Perineal infection is simple wound infection and should be treated on general surgical principles Far specialists long ago learned the vital importance of draining out with ligation if necessary the thrombosed internal jugular vein in cases of lateral sinus infection due to disease of the mastoid and there is certainly striking similarity between infected thrombus in the jugular vein and a infected thrombus in the veins of the pelvis

F. L. CORVILL, M.D.

NEWBORN

Bailey II and Bagge II J The Effects of Irradiation on Fetal Development (Am J Obst & Gynec 1913)

Experiments upon the lower animals have shown that on the sex glands are frequently irradiated before fertilization the typical fetal reaction are follows

A disturbed abnormal arrested development resulting in the formation of monster conforming more or less to general type and pronounced disturbance in the development of the central nervous system (Bob Perthes, O and G Hertig Sch par Tur Bordier and Bald in)

A marked tendency to a loss of fertility

A specific modification of the hereditary mechanisms (Mia or) and the production of inherited defects in the young especially in the eyes (Little and Bagge)

Irradiation during pregnancy causes the following typical disturbances fetal development depending upon the developmental period at which the irradiation was instituted

Disturbed arrested abnormal development with death of the embryo absorption or abortion stunting of growth cataract genital lesions of the central nervous system and blood vascular disturbances in the embryo (Hippel and Pagenstecher Regaud Noyes Lacaze-Magne and Couillard)

In judging clinical reports the authors conclude that when comparatively great distances resulted the child the irradiation as given early in pregnancy Irradiation during early pregnancy may cause the death and premature delivery of the fetus

Irradiation during late pregnancy is not so apt to produce gross developmental abnormalities in the child at birth but in some cases children irradiated during this period or prematurely delivered showed postnatal growth disturbances or died within the first year Werner reported three cases in which retardation of growth resulted, and four in which the child died within the first year

The severity of the treatment well the period at which the irradiation is given no doubt determines the reaction of the fetal tissues

The experimental evidence in the lower animals shows that great probability of irradiation is pure the follicular elements of the ovary The first patient whose case is reported by the authors as suffering from Hodgkin's disease and ten months before conception was heavily irradiated with the X-ray A male infant with an extensive developmental arrest in the formation of the head was born and died few hours after birth The second patient who was treated for fibroid with gamma ray radiation became pregnant eighteen months later In this instance the girl born infant delivered at term In the first case gamma ray radiation was given from platinum to be placed in the uterus Conception occurred seven months later and the child was apparently normal at birth The authors state that their evidence is not sufficient to warrant attributing the developmental defect in the first case or the stillbirth in the second to the irradiation

In the treatment of menorrhagia in the child the drug period complete stenosis is preferable to the possibility of a damaged germ plasm

F. L. CORVILL, M.D.

Sherman, D. H., and Lobner, H. R.: *Bleeding and Coagulation in the First Week of Life. N York State J M* 923, 1934, 46

The authors emphasize the fact that too little consideration has been given to hemorrhagic birth accidents to possible blood abnormalities in the child. The immediate danger of birth hemorrhage ends with the first day but its results may not appear until much later in life. At the Hooper Foundation, Lucas and his associates learned that the clotting and bleeding times even in normal infants, are apt to vary considerably during the first ten days. Rhodda's test shows that the average coagulation time of the newborn is from five to ten minutes. According to Duke's test, it is from 1 to five minutes.

At the Buffalo General Hospital, under the direction of Roman, the authors are beginning the study of the blood of infants by Rhodda's method. The second drop from puncture of the heel is caught in a clean watch glass containing No. 6 shot and this watch glass is covered with another. The glasses are then tilted every thirty seconds until the shot is fixed in the clot. The bleeding time is shown by the puncture. Observations are made daily for five days in 100 cases. In twelve cases the clotting was prolonged beyond nine minutes and in twenty-eight cases the bleeding time was more than five minutes. A large number of these showed slight prolongation on the second, third, and fourth days. In two cases the bleeding continued for hours. The only case of cerebral hemorrhage the bleeding time was ten minutes and the clotting time fifteen minutes on the second day. The infant recovered completely after the subcutaneous injection of 10 cc. of horse blood.

The authors conclude from their work that the newborn there is a definite blood dyscrasia which is characterized by interference with the normal blood clotting on the second or third day. This is no more frequent in premature than in mature infants. It is a temporary condition of hemophilia which subsides before the tenth day. It is present in 38 per cent of all infants; it varies in degree and is characterized by prolonged bleeding time rather than a prolonged clotting time. The suggestion is made that the cause of hemorrhagic disease in the newborn is change in liver function due to the change in the circulation from the fetal to the mature.

In conclusion the authors state that surgeons should insist upon determination of the clotting and bleeding times before operating upon infant during the first ten days of life.

ROSEAN JERSON, M.D.

Talks, F. H.: *Blood Transfusion by the Citrat Method. I. Hemorrhages of the Newborn. J Am U Ass* 9, 3, 1935, 678

This article reports the successful results following blood transfusion in fourteen cases of hemorrhage of the newborn, one of them complicated by uterine

The author states that grouping of the blood before transfusion is unnecessary as hemagglutination and precipitins are not developed in the child to any great extent before the second year of age. He suggests that, if the mother's blood is used, slight excess of citrate solution be employed because of the greater tendency to coagulation in puerperal women.

Striking improvement is shown after the transfusion of from 70 to 100 cc. of blood. This amount of blood is greater than that suggested by the majority of writers in discussing transfusion for very young infants.

The author directs out the jugular vein in the neck and ligates the vein after the transfusion.

SOURCE: JACOB M.D.

McDowell, H. C.: *Postmortem Findings in the Newborn. Y York State J M* 9, 3, 1934, 143

From the practice of Potter and himself the author reports the findings in thirty stillborn infants or those dying within ten days of delivery. All of these infants were delivered by cesarean.

McDowell remarks on our lack of knowledge concerning the cause of stillbirth and emphasizes the importance of investigating at every opportunity. After an excellent résumé of the reports from several recognized maternity centers he mentions the various factors: maternal, fetal, cord and placental, which contributed to stillbirths in his own series of cases. The autopsy findings are then taken up. The following pathologic conditions were found: suppurative hemorrhages (ten cases), pulmonary hemorrhages (seven cases), (1) associated with pneumonia; (2) kidney infarction, (1 case), subdural hemorrhages (1 case), cerebral hemorrhage (three cases), meningeal injection (two cases), cerebral embolism (air) (one case), pericardial and subperitoneal hemorrhages (1 case), congenital deficiency of the left diaphragm, (the lungs, stomach, spleen, and bowels being in the chest) (one case), intra uterine asphyxia, (five cases), birth injury (fractured skull) (1 case), fracture of vertebra, (one case), perforation of the skull (1 case), spine bifida (1 case), pneumonia (one case), tearing of the tentorium cerebelli (four cases), hydronephrosis, (one case), enlarged suprarenals, (one case), hydrocephalus, (two cases), and hemorrhagic diathesis, (two cases).

A further grouping of these cases reveals that 3 per cent also had pulmonary hemorrhages. These hemorrhages are not in themselves the cause of death. Among the direct causes are prolapse of the cord, premature separation of the placenta, and uterine asphyxia due to pressure on the cord. In the author's opinion these hemorrhagic conditions are due to increase in the clotting time of the blood caused by external pressure applied upon the fetus either through the cord or directly. Prolonged labor by lowering the vitality of the fetus and causing continued pressure upon the body undoubtedly is a cause of hemorrhage.

In the cases of spina bifida, hydrocephalus and other cranial abnormalities the author found changes in the glands of internal secretion. He believes there is a definite relationship between the development of the fetus and these glands. Pressure upon the body of the fetus may be as great as that upon its head. In the series of cases reviewed, syphilis was found in only one although three of the fetuses were macerated.

In conclusion the author states that the chief causes of death are prolapse of the cord and placental complications hemorrhagic conditions in the fetus (the result of cord complications accompanied by asphyxia neonatorum and placental complications) and abnormalities and infections of the fetus. Syphilis rarely causes fetal death. By decreasing the time required for the fetal head to pass through the pelvis, the author has reduced the cases of cerebral hemorrhage and eliminated mutilating operations upon the child. The number of birth injuries has been reduced by eliminating the use of forceps. The remaining problem is the method of decreasing the clotting time of the blood of the fetus.

Romero J. J. M.D.

MISCELLANEOUS

Dale, H. H. The Value of Ergot in Obstetrical and Gynecological Practice With Special Reference to Its Present Position in the British Pharmacopoeia. *Proc Roy Soc Med Lond* 93: vi, Sect Obst & Gynec.

The difference in the two commonly used preparations of ergot in the British pharmacopoeia, extractum ergotae liquidum and extractum ergotae (or ergotina) depends on their preparation. The former is a watery extract made with the addition of alcohol which carries down the materials regarded as impurities. The latter is an alcoholic extract from which an insoluble residue has been precipitated by the addition of water and removed.

Tanret first isolated from ergot a pharmacologically and therapeutically active substance named "ergotamine." This included a pure crystalline and an amorphous alkaloid, which he considered identical in their essential properties.

Later workers demonstrated that the crystalline form is practically inert. Still later crystalline salts were obtained from the substance formerly considered amorphous. This latter substance remained "ergotamine," was considered the principle responsible for the specific therapeutic action of ergot.

At that time, however, practitioners were using the preparations of the British pharmacopoeia which had been freed of the ergotamine. There was confusion as to the value of measuring the therapeutic strength of a liquid extract of ergot by its effect on the blood pressure of the cat or its action on isolated uterine muscle because the active principles of the substances measured were demonstrated to be the bases tyramine and histamine.

A new alkaloid—ergotamine—was isolated from ergot by Stoll, a Swiss chemist. Laboratory tests have led to the belief that this is identical qualitatively and quantitatively with ergotamine. It is suggested that official extracts be so revised that they will retain these two alkaloids.

Ergotamine citrate, ergoserin, and fermenin owe their activity to the specific alkaloids. A preparation called emmenon contains the specific alkaloids and the potrefactive bases as well.

Since the war the difficulty of obtaining ergot from Romania has resulted in the preparation of product containing the non specific bases but lacking the ergotamine.

The author suggests that the type of ergot action, and consequently the type of ergot preparation desired in gynecology may differ from that needed in obstetrical procedures. In this discussion he shows how ill defined is the position of ergot and its official extracts relative to its specific value and therapeutic action.

J. E. DOWDA, M.D.

GENITO-URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Sewern, A. G. M. A Case of Acute Bilateral Suprarenal Hemorrhage. *Lancet* p. 3, col. 646

The case reported was that of a 59-year old unmarried woman with chronic melancholia. She was a patient in the Devon Mental Hospital. During her three years' residence in the hospital her general condition had been poor but she had never shown symptoms of definite illness. Routine medical examinations had indicated slight arteriosclerosis and slight albuminuria. There were no signs of Addison's disease or other tuberculous foci and none of the external sexual abnormalities associated by some observers with disease of the suprarenal glands.

During the early part of the day of the attack reported the patient appeared well but late in the afternoon collapsed rather suddenly and became profoundly anæsthetic. Her condition then became worse and death occurred within three hours.

At autopsy the body showed no cutaneous rash, bronzing, or pigmentation of the mucous membranes, and no macroscopic lesions were found in the abdominal cavity. As far as was ascertained, the sympathetic ganglia and the other endocrine organs were normal, with the exception of the spleen, which was putrescent and pale. The kidneys showed slight interstitial changes. In the region of the pancreas there was hemorrhagic staining of the retroperitoneal tissue, but on section the pancreas was found normal.

The suprarenal bodies were both distended to the size of a hen's egg, oval, dark-red, free from adhesions, separated readily from the kidneys, and showed no signs of tuberculous disease or neoplasm. The right suprarenal weighed 37 gm. and the left slightly less. There was no pus or necrotic tissue and no evidence of inflammation. On section, the cortex was seen to be thinned and the gland distended with unorganized blood clot. The medullary chromaffin cells had been destroyed. The hemorrhage had evidently begun in the medullary tissue and may have coincided with the first episode.

Microscopic examination of both suprarenal glands showed recent hemorrhage in the medulla causing complete disorganization of the cells and infiltrating the thin cortical layer. Sections were stained for micro-organisms without result, and Gram's staining also showed no evidence of bacteria.

CARR R. SEWERN, M.D.

Thomson-Waller, J. Remarks on Pyelography. *Arch. Radiol. & Electrol. 19* 3, 341-354

The early and accurate diagnosis of many diseases of the urinary organs depends upon the advances made in roentgenology.

The author has used sodium bromide constantly since April 1920. Its advantages are that it is cheap, unchanged by boiling, clean and probably non-irritating, especially in 50 per cent solution.

The important points in the technique of pyelography are as follows:

1. The examination must be carried out without general anæsthetic.

Previous experience in catheterization of the ureters is necessary.

3. Before the opaque solution is introduced the fluid in the renal pelvis must be withdrawn by suction with a syringe connected to the ureteral catheter. The injection of an opaque fluid into a pool of retained urine gives a poor shadow.

4. The opaque catheters should be of moderate size so that they will not completely fill the ureteral lumen.

5. The catheter should be passed until it is arrested and then withdrawn 1 cm.

6. The patient should lie on his back and the couch should be inclined so that his head is low.

7. The roentgenologist should have the plates and tubes in position before the pelvis is filled and should be ready to make the exposure without moving the patient and without delay.

8. The injection should be made slowly and with gentle touch.

9. When pain is felt in the kidney the injection should be stopped.

10. When the exposure has been made the fluid should be removed from the renal pelvis by suction.

The fully-developed hydronephrosis may be diagnosed without pyelography but it is of great importance to recognize early changes before destruction of the kidney tissue is advanced, and this can be done only by accurate reading of the pyelographic plates.

The five essentials for the correct reading of a pyelographic plate are:

The shape and lie of the pelvis. The normal pelvis is trumpet-shaped and set vertically on the upper end of the ureter. From it, the calices project laterally and anteroposteriorly.

2. The shape and appearance of the calices. The normal calyx has a short neck and an expanded end which is cup-shaped. In the hollow of the cup lies the apex of the pyramid. Calices seen end-on appear as rounded darker patches near the outer border of the shadow of the pelvis. Usually most of the calices are seen projecting laterally. Occasionally a number of end-on calices are shown and may suggest stone shadows.

3. An opaque catheter passes from the ureter into the upper calyx vertically or with slight outward curve.

4. The upper ureter, the lower margin of the renal pelvis, and the lowest calyx form a symmetrical curve amounting to half a circle. Thus the author calls the "uretero-caliceal curve."

5. The expansion of the ureter into the renal pelvis is gradual and there is nothing to mark the point of juncture.

The earliest changes in the development of hydronephrosis occur in the calices. The cup end of calyx becomes rounded or clubbed so that the cupping disappears. The neck is shortened or broadened. In advanced hydronephrosis the calices are represented by rounded haws projecting from the expanded pelvis.

The pelvis begins to show changes in shape becoming rounded and sometimes almost square. The upper margin is elevated and the lower margin is depressed. The over-distended normal renal pelvis should not be mistaken for an early hydronephrosis.

The uretero-caliceal curve loses its symmetry and becomes an angle. The angle becomes gradually reduced in size until ultimately it almost disappears.

The upper wall of the pelvis is pushed upward and the line of the ureter and upper calyx is changed. A catheter passed up the ureter will not enter the upper calyx but will impinge on the roof of the pelvis, raising it up like a tent pole or may coil round and double into a loop.

Changes at the juncture of the pelvis and ureter are then observed. The lumen may appear narrowed or the angle at which the ureter joins the pelvis may be altered.

Other uses for pyelography and ureterography are the following:

The localization of supposed stone shadow in the kidney. Pyelography will increase the accuracy of the localization.

The localization of shadow in the renal area. With the greatly improved technique of roentgenography, new difficulty for the urinary surgeon has arisen as gall stones are now being demonstrated on the X-ray plate and shown in the renal area or near it. Pyelography will demonstrate the exact position of the renal pelvis and calices and their relation to a shadow in such a doubtful case. If the shadow does not lie over that of the renal pelvis or calices it is probably due to an extra-renal cause. Another method of differentiating gall stone shadow is lateral roentgenography and later pyelography.

1. The diagnosis of abdominal tumors. The cases in which difficulty arises are those in which there are no localizing characters (such as a notch) or localizing symptoms (such as hematuria or jaundice). The renal pelvis and calices may be shown to lie at distance from the swelling. The following occurred in the author's practice: (1) mass of abdominal glands in a child, (2) hydratid cysts, its head to the liver and (3) retroperitoneal sarcoma.

LOREN GEORGE WILD

O'Neil, R. F. The Importance of Pyelography in Recognizing the Causes of Obstructive Abdominal Symptoms. *Boston M & S J* 93, 1219, 671.

Pyelography and ureterography are extremely accurate means of diagnosing and excluding lesions of the urinary tract. In some lesions of the urinary tract the symptoms may be typical and suggestive of their location but in others they may suggest a lesion remote from the parts involved.

In cases of supposed renal colic it is necessary to exclude appendicitis, calculus ureteral link, and renal torsion. When the urine is normal and the roentgenogram inconclusive, the use of the opaque catheter or pyelography and ureterography are indicated.

The differential diagnosis of lesions of the upper abdomen is equally important. Pain may occur in either quadrant and the physical examination may be negative or misleading. The conditions to be differentiated are distention of the gall bladder, mesenteric cyst, renal lesions, intra- and retro-peritoneal growths and pelvic tumors.

Pyelography is a hospital procedure and the patient should be kept quiet for several hours after the examination. The contrast medium is 1-5 per cent sodium iodide solution. The fluid is injected slowly by the gravity method and the injections should be stopped at the first sign of discomfort. Simultaneous bilateral pyelography is to be condemned, especially if the kidney are known to be damaged. The picture should be made by ureterogram made by withdrawing the catheter and injecting the ureter.

Pyelography is contra-indicated in tuberculous, acute urinary infections, and large hydronephroses in which the diagnosis can be made from ordinary catheterization of the ureter also in the cases of persons whose general condition is poor and those who react violently to instrumentation.

LOREN GEORGE WILD

Dyke, S. C. On the Passage of the *Staphylococcus Aureus* Through the Kidney of the Rabbit. *J Path & Bacteriol* 93, 1274, 64.

The author gives the history of the study of the subject from the investigations of Cohnheim in 1880 to the present time. Before Cohnheim's experiments with the *staphylococcus aureus* in 1885 it was generally believed that bacteria are never excreted through normal kidney. In 1896 Biedl and Kraus found that the *staphylococcus* injected into the blood appeared in the urine in a few minutes. Luessen and Gopp made almost the same finding with regard to the bacillus coli as he discovered the bacteria in the glomeruli and Bowman's capsules. In 1911 Lepper using *coliform* bacteria found that in the absence of lesions in the kidneys the organisms did not appear in the urine and that the initial lesion was a bacillary embolism of the capillary vessels of the papille.

In Dyke's experiments on rabbits the cocci injected into the blood stream did not appear in the

urine in any instance in less than five hours and could be demonstrated in the kidneys only when the organs were removed from the experimental animals and incubated within five hours of the injection. I kidneys removed fifteen minutes after the injection, the cocci were detected in the glomeruli, the capillaries of the tuft were engorged, and small coccal emboli were seen. Dyle concluded that destruction of cocci by phagocytes occurred in the glomerular tufts. In kidneys fixed after eighteen hours he discovered abscesses which had their origin in the vessels and in olved the tubules subsequently. Later specimens showed abscesses in the medulla as well as the cortex. In kidneys removed forty-eight hours after the injection, an abscess was demonstrated in the glomerulus still bounded by Bowman's capsule.

Dyle concludes that normal kidneys are not capable of excreting living organisms circulating in the blood. He believes that in his experiments renal lesions are present as soon as the cocci are demonstrated in the kidney but are not sufficiently gross to be demonstrated until after the lapse of eighteen hours. These lesions he attributes to the lodgment of coccal emboli in the small vessels.

B. F. ROLLER, M.D.

Magoun J. A. H. J. Renal Function Following Nephrotomy. *Surg. Gynec. & Obst.* 1923, xxvii, 675.

In four of twenty-one cases of complete nephrotomy performed in the dog, clinical conditions and in twelve of thirty cases in which a nephrolithotomy had been performed, secondary nephrectomy was necessary on account of hemorrhage.

Experiments on animals are carried out by the author to determine the amount of destruction and the consequent lowering of renal efficiency resulting from nephrotomy. Four series of experiments were conducted: (1) bilateral nephrotomy; (2) the operation; (3) bilateral nephrotomy with an interval between the two operations; (4) the removal of one kidney and subsequent nephrotomy on the remaining kidney; and (5) unilateral nephrotomy and removal of the other kidney later.

Twenty-six nephrotomies are performed on twenty-three dogs. Stones were formed in four of the dogs. Hemorrhage occurred in three (secondary in two and consecutive in one) uremia developed in seven (associated with hemorrhage in two and without stones in one) a temporary change in function with return to normal was noted in nine, slight change in function occurred in five, moderate change in function occurred in two, and a marked change in function occurred in seven.

The author draws the following conclusions:

The arrangement of the arteries of the kidney is different in man and the dog.

In the dog complete nephrotomy (bilateral or unilateral) may be performed, the maintenance of life and renal function. A single kidney subjected

to nephrolithotomy will maintain sufficient function to support life and health.

A serious danger of complete section of the kidney is secondary hemorrhage. Smaller incisions may be made into the kidney to remove a stone with small risk of secondary bleeding.

Generally nephrotomy is the operation of choice in the treatment of renal calculi in selected cases, however nephrolithotomy is indicated.

Crosbie A. H. Kinks of the Ureter Due to Aberrant Vessels. *Radon. M. & S. J.* 1923, xiv, 873.

Any vessel crossing the ureter to the lower renal pole may cause obstruction. Vessels coming from the renal vessels or the aorta and vena cava lie anterior to the ureter and may cause obstruction close to the ureteropelvic junction. If the kidney is in the normal position, they are harmless.

Aberrant vessels are responsible not only for many cases of Duhring's crisis, but also for recurrent pyelonephritis, chronic hydronephrosis without crises hematuria, and bacilluria. Obstruction to the free flow of urine leads to infection.

The symptoms caused by kinks produced by aberrant vessels vary according to the acuteness of the obstruction and the amount of infection. In some cases only frequency may be present and there may be no pain higher than the bladder. There may or may not be pain on the side affected, and frequency may or may not be noted. The urine may give a clue or appear normal, but sedimentation usually reveals a few erythrocytes and leucocytes or both. Severe cases with very acute colic and palpable hydronephrosis are easily diagnosed. The more complete the obstruction of the ureter the more quickly the kidney ceases to excrete.

The pathologic changes may be very slight or show all degrees of hydronephrosis and pyelonephrosis.

The diagnosis is usually made from the pyelogram, but may be suggested by the history and symptoms. The technique used by the author is as follows:

Both ureters are catheterized, the catheter being passed to the renal pelvis. Pyelograms are made with the patient holding his breath. A second pyelogram is then made with the catheter withdrawn a few centimeters below the renal pelvis, thereby revealing the presence of a kink. Three or four cubic centimeters of solution are injected just before the pyelograms are taken.

The treatment is operative. The free oblique incision used for nephrectomy is employed in order to expose the pelvis and ureter freely. If there is no hydronephrosis and not much infection the aberrant vessel is divided and nephropexy is done. If large hydronephrosis is present, nephrostomy is done after the vessel is cut, and rubber tube drainage through the kidney substance to the pelvis is maintained for a week. The operation should always be preceded by pyelography. Judgment should be used in cutting large vessels going to the lower renal pole as this may cause renal necrosis.

LOREN MERRILL, M.D.

Thomas, G. J.: The Diagnosis and Treatment of Ureteral Calculi. *Minnesota Med.* 9:3. '26

Clinical observation and animal experimentation demonstrate that infection plays a major rôle in the production of renal stone. The author reports study of the history and clinical findings in fifty cases of ureteral stones. Infection is present in 75 per cent. In 70 per cent there was infection in the teeth, tonsils, and sinuses. Seventy to seventy-five per cent of renal stones pass from the kidney. In about 4 per cent of the cases the stones are found in the right ureter, in 50 per cent in the left ureter, and in 1 per cent in both ureters. Stones are found in males three times as often as in females. Lightly per cent of stones found in the ureter are thus the lower third, few in the middle third, and 15 per cent in the uretero-pelvic juncture.

Vesical irritability is noticed at some time during the passage of ureteral stone in about 80 per cent of the cases. This is fortunate as the sign frequently assists in the differential diagnosis from other abdominal or pelvic conditions. If stone completely obstructs the ureter vesical irritability is not frequent unless the obstruction is in the bladder section of the ureter. There is more complaint of frequency of urination than of burning. The diagnosis is often difficult and depends upon a series of findings such as pain, vesical irritability, positive X-ray findings, positive pyelo-ureterogram obstruction of the ureteral catheter, and positive findings on human palpation.

The author emphasizes particularly that ureteral stone should be thought of in every case of abdominal pain, although not all ureteral calculi cause pain in their passage. Differential functional tests do not indicate the true function of kidney which has been temporarily damaged by the presence of ureteral stone.

A calculus may remain in the ureter for months without causing pain or permanent damage to the kidney. Ninety to 90 per cent of ureteral stones pass spontaneously or can be removed by manipulation. A permanent ureteral catheter produces dilatation, relieves pain, and facilitates the entry and quick passage of ureteral stone. After treatment which includes the removal of the focus of infection in the pelvis of the kidney, it is important not to be carelessly and thoroughly treated out because infection is one of the etiologic factors in the production of ureteral stone. If patient comes from localities in which the prevalence of cases of urinary stones is large the drinking water should be boiled.

HARRY W. PLACENTIER, M.D.

Walters, W.: Surgical Treatment of the Ureter in Tuberculosis of the Kidney. *Minnesota Med.* 9:1. '26

The ureter which is involved in the tuberculous process infecting the kidney is often the source of post-nephrectomy drainage. In cases in which the ureter is tracted close to the bladder it is

essential that it be removed below the point of narrowing at the time of nephrectomy.

Various methods have been employed to dispose of non-strictured ureters, such as ligation and cauterization of the stump. Judd ligates the ureter and threads the stump into a rubber tube thus isolating any infectious drainage and allowing the wound to heal by first intention.

In a study of the end results in 3 patients who had been nephrectomized for renal tuberculosis it was found that compression of the stem of the ureter, ligation of the ureter, cautery and cauterization of the stump gave the best results. In 48 per cent of the cases there was primary union before the patient was dismissed from observation.

The forceps method (sealing the cut end of the ureter for from eight to seventy-two hours with the jaws of forceps on the renal pedicle) gave only fair results. In the majority of these cases the forceps were used to control the vascular pedicle of the kidney and the ureter was caught in the same closure. This method is used only in emergency because of short pedicle.

Suturing the ureter to the skin incision was also unsatisfactory. W. J. Mayo removes all strictured ureters at point below the structure. In other cases, he lumps the ureter with a harmonic drapes it with the artery and drops it by a without a ligature which he believes might act as a foreign body. After thorough hemorrhostasis the incision is closed without drainage.

BLADDER, URETHRA, AND PENIS

Legues and Rochet: Peri-urethral and Peri-urethralitis After Certain Cystostomies or Suprapubic Prostatectomies. These conditions permit vesical and urethral cystostomies on prostatectomies as perineal cystostomies. *J. Urol. Med. & S.* 9:1. '26

Suprapubic cystostomy is today used by a thousand surgeons. In this article the authors discuss the long standing urinary infections, especially those associated with prostatic disturbances which have been subjected to cystostomy. In rare cases local or even general complications may follow a suprapubic operation especially when the incision opening is too small. A prolonged retrograde urinary stagnation develops, the pocket formation vesical and hypogastric drainage usually clears this up but sometimes the inflammation increases spreading around the base of the bladder into the retroperitoneum and from there extends along the abdominal wall near the inguinal canal or penetrates the abdominal wall.

Usually it descends into the true pelvis and points out through the obturator foramen under the adductor muscles of the thigh. It may erode the posterior surface of the pubis and cause osteomyelitis. In one case observed by the authors there was a true emphysema arthritis. Pressure on the soft parts over the pubis becomes very painful and eventually,

when the infection has passed into the thigh adductors, permanent thigh flexion and adduction result. Pressure on the adductors at the pelvic end is painful. General symptoms supervene and septicemia begins.

A second type of complication, which does not depend on such infiltration, occurs a long time after the cystostomy when only small fistula remains. In such cases sounding is no longer done and there can be no ulceration from an indwelling catheter because it has been removed. However small abscesses develop slowly there is slight fever and the general condition is poor. The abscesses may point at the vesical opening, the ilio fossa, the abdominal muscles, the pelvis, or the perineum. Following the drainage of one abscess new points of infection and abscess develop and the condition becomes aggravated. Pelvic cellulitis follows, the abscesses spread to the liver and death results from septicemia.

Several hypotheses are advanced to explain this condition. The infection probably comes from slowly developing low prostatic abscess, an abscess within the bladder wall, or chronically infected prostatic urethra.

The authors believe that in old prostatic cases in which there have been multiple explorations and soundings the deep urethra and the bladder mucosa may be the sites of chronic ulcerative infection. Under such circumstances the infection is easily transmitted to the lymphatics of the bladder and prostatic urethra, thus leading to the formation of the multiple and sometimes distant abscesses mentioned. When the pelvis has been dissected by the incisions, pyæmia results.

Hypogastric infiltration and pelvic cellulitis are also encountered after prostatectomy but very few such cases have been reported. The authors saw only three in more than 1,000 cases of prostatectomy. These inflammations are exactly like those following cystostomy and are caused by the same mechanism. They are more apt to develop after prostatectomy than after cystostomy on account of the larger opening into the bladder and the greater amount of trauma in the former operation. Pelvic cellulitis spreads from the poorly drained and infected bed from which the prostate was removed. In one case in which prostate as large as a walnut was removed infection of the prostatic pocket followed, and in spite of perineal drainage the bladder progressed extended to the liver and caused death.

After partial cystectomy, especially for malignant tumors and near the bladder base these complications are frequent and easily explained. When the bladder is amputated the parts cervical portion the infected urine easily stagnates in the operative field and behind the bone ring of the pelvis in spite of the porostomization of the all by sutures and the use of large suprapubic drain. Hypogastric infiltrations and pelvic cellulitis are treated.

The following rules with regard to the suprapubic incision have been generally accepted:

1. In uncovering the bladder do not free it just behind the pubis and in pressing back the peritoneal cul-de-sac keep below the superior border of the pubes. In this way perivesical and prevesical cellulitis may be prevented.

2. Do not extend the bladder incision too low into the vesical sac, as this would give the urine an opportunity to stagnate behind the symphyseal

In making a true cystostomy in form fistula, the lips of the bladder opening should be sutured to the skin or in the cases of fat patients, to the internal borders of the rectum. In a prostatectomy if the gland is very large, the bladder incision should be enlarged transversely rather than toward the neck. The bladder wall may be sutured to the muscles to serve as guide for the entering fingers. The excision of the prostate must be done firmly but gently and without tearing the bladder or leaving fragments of the gland. After the gland is removed it should be tamponed and the bladder all closed around a Freyer tube.

If signs of infection appear especially unexplained fever it is best to insert perineal drainage to the lateral sides of the bladder not directly in the midline. All other abscesses should be drained as early as possible wherever they point.

KILLING SEARS, M.D.

Hyman, A. Diverticula of the Bladder in Children
J. Urol. 9:3 15 43

Diverticula of the bladder are not unusual in adults but only three cases of this condition in children under 15 years of age have been reported in the last seventeen years although these pouches are generally considered to be congenital. The true diverticulum comprises all the coats of the bladder while the false includes only the mucous membrane. One school maintains that the condition is congenital, another that it is acquired and another that there is always a congenital predisposition to its development. The contributory factors are increased distention or activity of the bladder muscularis.

The diverticula may be single or multiple. They range in size from that of a small plum to that of an orange and are most numerous when they communicate with the ureter. The cases are not usually seen until urinary infections supervene. All of the cases studied showed residual urine and pyuria. Diagnostic signs are acute retention, hematuria, pyuria, residual urine and distention of the bladder, but for definite diagnosis the cystoscope and cystogram are essential.

The prognosis is good and the most important is how. Non-surgical methods of treatment are useless for cure radical extirpation of the sac is necessary. When the ureter has been occluded it must be divided and reimplanted.

The author reports three cases treated at the Mount Sinai Hospital, those of male children 9 years 9 months and 2 years old. All are cured by operation. In every instance it is necessary to reimplant the ureter. R. F. ROBERTS, M.D.

Culver H. and Forster N. A. Primary Carcinoma of the Urethra. *Surg Gynec & Obst* 923, xxxv 473

The authors report three cases of primary carcinomas of the urethra, two of those of females. Porter and Parrother classify carcinomata of the female urethra as follows:

I True urethral carcinomata

a The ulcerous type. This is rare only three cases being recorded.

b The infiltrative type. This is somewhat more common than the ulcerous type but Percy found only sixteen cases in 903 Karaki found only fifteen in 908 and Whitehouse collected only eleven in 911.

II Vulvovaginal urethral carcinomata

a The polypoid or papillary type. About fifteen cases have been reported.

b The ulcerous type. The neoplasm begins at the meatus or its vicinity and below and destroys all the neighboring tissues. Seven cases of this type have been found in the literature.

The infiltrative type. This is the most common type and usually begins as a small meatal tumor which soon invades the vestibule, the urethra, vaginal septum, and the surrounding structures.

The same classification is suitable for adenocarcinoma. It may be applied to the male the true urethral types of carcinoma arising from the urethral epithelium or its glands and being of ulcerous or infiltrative character and the per urethral types arising from the epithelium surrounding the meatus and involving the urethra secondarily. The latter may be ulcerous as in malignancy following chancreal infection, or fill at spreading from the glands or the surrounding structures and involving the urethra gradually. Finally there are cases resulting from the malignant degeneration of papilloma in the region of the meatus.

Histopathologically the neoplasms are squamous, columnar or adenocarcinomatous type. The latter is the most uncommon. As to the nature of malignant tumors however, the body the direct cause is unknown. Reports indicate that the incidence in both sexes is greatest between the ages of 40 and 60 years. Leucoplakia may be considered as important in some theories. Carcinoma as a forerunner is undoubtedly of considerable consequence although we took only about 10 per cent of the case reports in the literature. Especially does this seem to be true as subjected to frequent irritation causing chronic urethritis. Stricture and chronic urethritis in the female are not generally considered of importance. Trauma and predisposition are given considerable weight by the majority of authors. O'Neill gives the predisposing causes in the male: (1) leucoplakia from chronic urethral irritation and stricture formation. The latter is present in 50 per cent of the cases. O'Neill believes that in the majority of instances the lesion arises from the bulbous urethra which is the most common site of stricture formation.

There are two recognized methods of treatment, operative procedures and treatment by physical agents such as radium and mesothorium. Aside from the cases in which an extensive operation was done the surgical treatment of urethral cancer has been attended by almost no postoperative mortality.

With respect to the use of radium and mesothorium the authors state that in inoperable cases this method of treatment is the method of choice. In the few reported cases in which these agents have been used they have been of benefit. Surgery combined with the use of radium has also been effective in some cases.

In operable cases it seems logical to use both surgical measures and radium. Small doses of the X-ray just what results might be obtained from the use of surgical diathermy combined with the after use of heavy doses of the X-ray is a problem for the future.

The prognosis in these cases depends apparently on the stage at which the patient seeks treatment as well as the associated pathology which may be present. In any event it must be considered grave for when once the tumor has become established they usually evolve very rapidly and the danger of recurrence following operative procedures is great. Consequently the earlier the cases are seen and treated the better the chances for recovery, provided recourse is had to the proper surgical procedures followed by the judicious use of the X-ray or radium. H. W. PLANCHETTE, M.D.

GENITAL ORGANS

Landau, H. Vasectomy as Method of Treating Prostatic Hypertrophy (Ueber die Vasectomie als Behandlungsmethode der Prostatahypertrophie). *Abh. N. h. h. 93*, 55.

Since Haberer in 1909 introduced vasectomy for the treatment of prostatic hypertrophy or as a preliminary measure, this operation has been performed in the surgical clinic of the Charité Hospital (Hildebrand) in twenty six cases. In sixteen its results are good, but in ten it was unsuccessful.

Of particular importance is the fact that when the radical operation is contra indicated, vasectomy followed by the use of the retention catheter for from four to six weeks sometimes relieves the symptoms for considerable length of time the ability to urinate spontaneously being regained for several months. Von HOFFMANN (2).

Young, H. H. Pre-Operative, Pre-Operative, Operative, and Postoperative Treatment. *Surg Gynec & Obst* 93, xxxv, 580.

PRE-OPERATIVE TREATMENT

In Young's opinion pre-operative treatment has been the chief factor in reducing the mortality of prostatectomy. Preliminary drainage is indicated unless the amount of residual urine is small and the kidney function and general condition are good. Young emphasizes the importance of injecting

large quantities of water during the pre-operative treatment. To determine the renal function he has used the phenolsulphophthalein test since it was introduced by Geraghty and Rountree. He finds that during thorough pre-operative preparation for prostatectomy the phthalein output gradually increases to a stationary level. The blood chemistry is also studied in every case.

The situation with regard to the kidneys is summarized as follows:

1. Renal impairment is proportional (roughly) to the back pressure in the ureters.

2. This is characterized by dilatation of the ureter, the pelvis, and the calyces and thinning of the renal cortex.

3. It is most common and most pronounced in patients with large quantities of residual urine who have not been catheterized.

4. It is less pronounced in cases with a large quantity of residual urine in which intermittent catheterization has been done.

5. Marked impairment may occur when there is less than 400 c.c. of residual urine but in such cases it is less frequent.

6. It occasionally occurs when the amount of residual urine is small (less than 100 c.c.) probably because of frequent and prolonged urination during which the ureters are closed and pelvic dilatation occurs.

Young finds that infection very frequently attacks the renal lesion but thorough continuous catheter drainage will cause improvement.

A. There is danger of suppression of urine from the sudden evacuation of a greatly distended bladder. Young forces the demonstration of this by giving it, if necessary, by infusion or by rectum when he finds the quantity of residual urine over 500 c.c. During the past ten years he has occasionally resorted to the drainage tube in order to maintain constant intravesical pressure. It is not clear, however, that this method is better than fractional catheterization.

Infection is the cause of a large number of fatalities. In some instances it spreads to the prostate and seminal vesicles, producing chronic prostatitis and orchitis or an abscess. If such an infection reaches the kidneys it may be very serious. Infection is soon times present in cases that have not been catheterized, particularly when the amount of residual urine is large. Almost all cases become infected after prostatectomy. Young's statistics seem to show that cases that would otherwise be smoother postoperative courses and are less subject to fever and toxæmia than previously sterile cases. In 20 per cent of his cases he finds epididymitis a troublesome complication.

In cases of bladder calculus suprapubic drainage may be required especially if the excretion of phthalein is poor and if retained catheter is not well tolerated. In reviewing 400 cases Young found that suprapubic drainage was done in only 1 per cent.

The arguments against suprapubic drainage are summarized as follows:

1. Suprapubic drainage requires considerable attention.

2. It is contra-indicated when the quantity of residual urine is large, the phthalein excretion is poor and suppression is feared.

3. It is associated with mortality of at least 3 per cent (Gardner says 3 per cent).

4. As most cases require drainage for three weeks or longer the suprapubic scar tissue is more of a hindrance than the fistula is a help.

5. Urethral catheter drainage is the safest and most satisfactory method.

Young discusses several of his cases in which death occurred because a catheter was not well tolerated. Most of these patients had a severe infection and death showed prostatic abscess or proctophrosis.

Bladder drainage is summarized as follows:

Cases in which the general condition and the phthalein return are good and the quantity of residual urine does not exceed 700 c.c. may be operated upon without preliminary drainage or more than ordinary surgical preparatory treatment. Of the author's 400 cases 46 were operated upon thus few days of their admission to the hospital.

Cases with a moderate or large amount of residual urine should have preparatory drainage and forced micturition even if the phthalein return is good but often may be operated upon in week if the chemical and laboratory findings are favorable.

Of cases with marked impairment of renal function (less than 10 per cent or less) should not be operated upon until the phthalein excretion has risen over 40 per cent or prolonged treatment (for three weeks or longer) has shown that the optimum has been reached. The condition of the kidneys is table the blood urea does not exceed 0.5 gm. per liter and the general condition is fair. 1 per cent of the author's cases in which the phthalein excretion is under 20 per cent there is only one death but all except the fatal case had proper preparatory treatment.

Cases with high blood urea (over .75) should be given most energetic treatment—from 7,000 to 10,000 c.c. of water daily. This applies also to cases with renal infection especially acute pyelitis.

Suprapubic drainage may be indicated in cases in which the bladder or urethra is spasmodic, painful, or contracted, certain cases with calculus, certain cases with carcinoma, tumor, ulcer or severe cystitis, and cases in which catheterization is very difficult or painful or an indwelling catheter is poorly tolerated and there is pronounced suppuration and epididymitis.

In the two-stage suprapubic operation, the first stage is often the most dangerous. Almost every case can be brought into condition for permanent prostatectomy without first stage suprapubic drainage. In the author's 400 cases, suprapubic drainage was used in only eleven (1 per cent). In his last 200 cases there were only two deaths before operation and none afterward.

Persons with diabetes and acidosis can be subjected to perineal prostatectomy if they are properly treated before operation. Either anesthesia prolonged operation, hemorrhage, and infection must be avoided, and postoperative treatment must be rigorous, especially if symptoms of coma appear.

Young finds cardiovascular disease very common among his cases of prostatic hypertrophy. Arterio sclerosis, which is also common, is negligible unless advanced. Young has operated on many patients with a history of apoplexy and with high blood pressure. High blood pressure is dangerous. To decrease it Young recommends rest in bed, reduced diet, and drugs. Excitation before operation and after operation should be prevented by morphine or other drugs. Young regards either as good cardiac stimulant for these cases.

A heart lesion was found in 48 per cent of 98 cases, but in the 1,049 cases reviewed there was only one operative cardiac death. In some cases in which fibrillation or other serious heart condition was found Young thought it best to send the patient home to lead catheter life rather than to attempt operation.

In cases of respiratory infection operation is contra-indicated until the infection has been thoroughly controlled. In such cases anesthesia should be induced with nitrous oxide and oxygen.

In the cases reviewed, pulmonary embolism was responsible for one death during preparatory treatment and for six after operation. As one of these patients died following an embolism, there is no longer given after the operation.

TECHNIQUE OF OPERATION

In Young's present method of exposure, an inverted U incision is made in the perineum, the prostate is reached by blunt dissection on each side of the central tendon, and the space behind the transversus perinei muscles and triangular ligament is opened up. After division of the median line structures (central tendon and rectourethral muscle) the posterior surface of the fascia of Denonvilliers is exposed. Division of the posterior layer of this fascia gives entrance into the space between the two which in fetal life, were perineum and gives easy access to the prostate, urethra, and vas deferentia.

Young believes that this method of exposure has an advantage over the old method in that the hemorrhage bulb is avoided, the external sphincter and triangular ligament are spared, the anterior surface of the rectum can be readily exposed and the prostate is exposed so that accurate operative procedures can be carried out. He opens the urethra by means of an oblique lateral or an inverted V incision. This makes it possible to enucleate the entire adenomatous hypertrophy in one piece and to remove every part of the prostate without injuring the neck of the bladder or the internal sphincter. Exploration of the area underneath the neck of the bladder is much easier with

this technique. The article includes several drawings which illustrate the steps in the operation.

A table showing the relation between age and mortality after prostatectomy indicates that the percentage increases gradually with each decade of life, but up to the seventy-fifth year remains very low. After the seventy-fifth year the operation is definitely more dangerous. However, of the last 98 cases operated upon by Young eighteen were those of men over 75 years of age and six were those of men over 80. In this series there were no deaths.

POSTOPERATIVE TREATMENT

In the 1,049 cases reviewed there were thirty-six deaths in the hospital, a mortality of 3.4 per cent. A chart of these cases shows a gradual decline in the mortality of perineal prostatectomy from 8.4 per cent in 1903 to 2.4 per cent in 1919. Since 1919 there has been no deaths. During the last period, in which there were 98 consecutive cases without death, four patients were refused operation, two of these died in the hospital.

All of the patients received plenty of water before they were sent to the operating room. Careful hemostasis, quick operation, and control of bleeding after the drainage tube is removed are methods which Young finds will prevent shock.

Pulmonary complications have been the most frequent cause of death. Pneumonia developed in 3 per cent of the cases. In the earlier cases it was due to ether anesthesia. Since the use of nitrous oxide oxygen anesthesia, it has been prevented. The patient should be kept warm and should be out of bed as soon as possible.

Uremia was the cause of death in 20 per cent of the cases. This is a direct result of serious impairment of the kidneys from back pressure or infection. As a rule the infection responsible is present before operation, but may ascend to the kidney afterward. Young believes that the risk of uremia is one that must be assumed, but that by prolonged catheter drainage and the administration of large amounts of water the patient can usually be brought into safe condition for operation.

Pulmonary embolism was the cause of death in 2 per cent of the cases. In some instances it occurs as a result of endocarditis, but as a rule the clot comes from the region of the wound. Cerebral hemorrhage occurred in three cases and cerebral thrombosis in 1. Heart disease was responsible for only two deaths.

Young's opinion is that there is no more important feature of treatment than the prevention or combating of sepsis. He finds that the most frequent offender is the epididymis. He uses many different kinds of antiseptics for irrigation of the wound and the bladder. Ascending infections of the kidney pelvis and cortex he treats with internal hydrotherapy. In some cases subcutaneous and intravenous infusions are necessary.

Gastrointestinal complications do not occur frequently but require attention and vigorous treat-

ment. The use of nitrous oxygen anesthesia has practically done away with postoperative nausea and vomiting. The patient may drink water in abundance easily. Abdominal distention from obstipation or intestinal obstruction is much less frequent after perineal prostatectomy than after the suprapubic operation.

In the care of the wound after perineal prostatectomy in Young's cases the gauze and drainage tubes are removed within thirty-six hours after operation and are not replaced, the urine then being allowed to escape through the lateral perineal wound which is irrigated superficially with a mild antiseptic at each change of the dressing. Water is forced through the urethra five days after the operation. The passage of a sound is not necessary.

The closure of fistula is usually spontaneous, occurring within the first three weeks after the operation. In 25 per cent of the cases it occurred within fourteen days. A persistent fistula is extremely rare. In 450 cases persistent fistula as present in only five and in the latter the postoperative treatment may have been accounted for failure of the fistula to close. Sixty-four per cent of Young's patients left the hospital within four weeks. Only 5 per cent remained eight weeks.

The act of micturition may not return to normal for several weeks or months. Incontinence of urine is rare. In 450 cases which Young personally reported there was not a single case of complete incontinence but there were three cases of incontinence while the patient was on his feet. Young insists on careful open operation back of the bulb transverse perineal muscles (triangular ligament and external sphincter, all of which structures should be carefully closed. The urethra should be opened far back near the apex of the prostate gland behind all sphincteric fibers.

Young finds that the act of micturition is distinctly more normal after perineal prostatectomy than after suprapubic prostatectomy because after the former the internal sphincter is usually restored to normal, whereas after the latter it is usually widely dilated.

Of the last series of 98 cases which Young operated and in which there were no fatalities 100 per cent were those of men over 70 years of age. In 20 per cent of the cases the excretion of phosphorus was below 50 per cent. 18 per cent the blood urea was over 0.50 gm per liter. Carcinoma disease was present in 49 per cent. Preparatory treatment with catheter as carried out on

60 per cent of the cases, and suprapubic drainage in only 1 per cent. The average length of time the patients remained in the hospital was thirty-four days.

GILBERT J. THOMAS, M.D.

MISCELLANEOUS

GILPIN, H. Z. Hemoglobinuria in Hemolytic Jaundice. *Arch Int Med* 93 XXX, 573

Gilpin reports the case of a woman aged 35 years, who had developed slight jaundice and anemia following a protracted convalescence from influenza three years before. For six months the anemia and jaundice were marked. On several occasions there were unexplained attacks of headache, depression, increasing jaundice and dark urine. When seen by the author a blood examination showed hemoglobin 35 per cent, 1,000,000 erythrocytes, 3,800 leukocytes, and relative lymphocytosis. The reticulated red blood cells were increased, the calcium and prothrombin time was prolonged, and the fragility of the erythrocytes increased markedly. The platelet count was 9,000, but there were no petechiae. The spleen did not seem to be enlarged. A test for syphilis was entirely negative. The urine contained varying amounts of albumin but no casts. Bile was found in the stool, but none was present in the urine except during the crises.

While the patient was under observation she had several severe protracted crises which closely simulated those of hemolytic jaundice, but were without gall bladder colic. The attacks were accompanied by hemoglobinuria. During one attack cystoscopy revealed bilateral hemoglobinuria without the presence of erythrocytes. Hemoglobinuria as demonstrated frequently mild attacks occurred without hemoglobinuria. Various therapeutic agents, such

as conglutinated horse serum or serum, calcium transfusions, etc. were apparently without effect. Moreover hemoglobinuria seemed prone to occur whenever the erythrocytes rose to approximately 1,000,000. During one remission the patient was given cool baths and at times ice bags were placed over the loins without deleterious effects. Moreover hemoglobinuria did not occur following blood transfusions.

The author briefly reviews the literature, pointing out that hemoglobinuria in hemolytic jaundice is typically superimposed condition entirely independent of syphilis and differing from the hemoglobinuria caused by chilling. Sudden increased hemolysis plus destructive renal secretion are mentioned as probable etiological factors.

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Zollinger F. Trauma and Tuberculosis of the Bones and Joints (Trauma und Tuberculose der Knochen und Gelenke) *Schweiz. med. W. h. tschr.* p. 12, 05, 86, 84

As tuberculosis is always caused by the tubercle bacillus trauma is a factor in its etiology only when the bacilli enter the body through the wound and the general or local resistance of the body is lowered by the injury. Inoculation tuberculosis is a primary and purely traumatic tuberculosis without open injury of the skin and the soft parts in the region of bones and joints such as occurs very rarely. As a rule there is an aggregation of an active local tuberculosis already present or a metastasis at the area injured. Numerous experiments on animals indicate that tuberculosis may be localized by an injury. Injury as an etiological factor may be assumed only under the following conditions:

At the time of the injury the person injured must have been entirely free from tuberculosis.

The injury must have been such as would have brought the tubercle bacilli to the area which became diseased later and such as would have lowered the general and local resistance.

3. The injury must have had sufficient force to cause anatomical injury of the bone or joint.

4. The injury must have caused immediate results.

5. The period of time intervening between the injury and the development of the bone and joint tuberculosis must have been that length of time which is necessary for the development of tuberculosis. The minimum time is from four to six weeks, and the longest time—tuberculosis of the skull pelvis and cricabra—one year.

6. The tuberculosis must have developed at the point of injury.

7. The immediate results of the injury must have passed over into the syndrome of the disease without interruption.

Traumatic aggregation of tuberculosis already present can be assumed only if the diseased area was injured if the aggregation followed the injury immediately if its development was more rapid than usual, and if at the time of the injury the tuberculosis was not in an advanced stage.

Bertrams (Z)

Lewis, D. Myositis Ossificans (see also p. 3100)

There are three forms of circumscribed myositis (1) the traumatic, (2) the non-traumatic and (3) the neurotic, each usually associated with ar-

thropathies or fractures occurring in tabes, dementia, or syringomyelia.

Kuttner Bender Schwartz, Werner and Cranwell have reported cases developing after puncture or stab wounds, and have attributed the presence of bone in the soft tissues to osteogenic cells dislodged into the wound by the missile.

Lewis reports two cases in which bone developed in the scar of an abdominal operation. He attributes the development of the bone to the metaplasia of connective tissues without osteogenic elements. In one case the linea transversa was incised. This is the remains of a rib which at one time extended toward the median line. There is question, however, whether or not it contains osteogenic elements. Phemister and Strauss have shown that bone may be formed in fascia or muscle as a result of the action of acid secretion on the tissue. In one of the cases reported in this article a gastro-enterostomy had been performed, but in the other opinion not enough gastric juice exuded into the incision to cause bone formation.

Myositis ossificans following posterior dislocation of the elbow causes considerable disability as it seriously interferes with flexion and extension of the forearm. Undoubtedly it develops as a result of periosteal stripping with displacement. The stripping usually occurs over the external and internal condyles, over the posterior surface of the humerus above the olecranon fossa and above the supra-trochlear fossa.

Myositis ossificans develops rather rapidly in muscle. The roentgen ray shows a shadow at the end of two weeks, and at the end of six weeks this gradually increases in density. Michael describes the roentgen ray shadow as a dotted veil which gradually increases in density until bony trabeculae are observed. The shadow may or may not appear to be attached to the adjacent bone.

Salman and Peiser reported cases of myositis ossificans developing after infectious processes in muscle, the result of degenerating myositis followed by calcification and bone formation.

Differentiation must be made between haematoma in muscle and muscle callus, an interstitial myxiphic process involving muscle and various types of muscle tumors. It is important to differentiate between myositis ossificans and malignant growths, as amputations have been done when the former is mistaken for malignancy. Periosteal sarcoma and myositis ossificans can be differentiated very definitely by means of the roentgen ray. Myositis ossificans attains its maximum size early and remains stationary for some time or diminishes, while osteogenic sarcoma grows rapidly without any tendency to remain stationary.

Since myositis ossificans tend to recede after attaining its maximum magnitude its movements to last as the range of motion should not be begun until the process has subsided. Bone should not be removed until it has reached definite form and density and then still continues to cause disability.

ROBERT S. REECE, M.D.

Wagner, T.: Acute Osteomyelitis of the Vertebrae (Akute Osteomyelitis der Wirbelsäule). *Deutsche med. Wochenschr.* 9, 2, 1918, 9.

The above reports the case of a 4-year-old boy who developed an abscess following an injury which he received while working in a fruit-log. The abscess was located in his general condition became more serious. At the end of eight days physical examination revealed stiffness of the neck, spinal rigidity, and redness of the soft tissues on both sides of the spine at the level of the eighth to the eleventh dorsal vertebrae. Lumbar puncture evacuated pus with a stimulator of blood (staphylococcus pyogenes aureus). Because of objection on the part of the boy's parents, operation was not performed until four days later. A long incision was made from the ninth to the twelfth dorsal vertebra. Paravertebral abscesses were found. The vertebrae were bathed in penicillin. Lumbar puncture revealed extra and subdural pus. Death occurred 11 days later.

Wagner assumes that the focus was in the body of a vertebra and stimulates the fatal result of the injury. (Trans.)

Morrea, J.: Osteochondritis Dissecans of the Knee (Osteochondritis dissecans d genou). *Arch. francophiles de chir.* 19, 2, 1918, 1.

Morrea reports the case of a boy aged 3 years 10 months and 11 days who had struck the inner border of the right knee against a metal bar. The blow caused sharp pain, but this soon ceased and the boy turned it all six months later. Knee symptoms appeared. The knee was painful when the patient got up in the morning and walking on a uneven surface caused pain. The pain was referred by the patient to the internal condyle and pain was elicited on pressure at this point. The boy was able to walk and to play football. The X-ray showed a zone of necrotic disorganization at the upper border of the internal condyle, bilateral genu valgum, and slight enlargement of the subpatellar sinuses.

Treatment with glycerophosphates and other tonics was followed by clinical and functional recovery.

Morrea reviews the subject of osteochondritis dissecans from the research of Morgagni in 1743 down to the investigations of Poulet and Vaillard, Kruegeland, and Koenig. According to one theory, the condition is due to spontaneous necrosis of osteo-cartilaginous fragments which sometimes remain in the cavity which they created when they became separated and sometimes remain free in

the joint. According to another theory the necrosis is due to traumatism.

The condition may become cured spontaneously, as in the author's case, but if the pain is intense and the functional disturbances are marked, operation for the removal of the necrotic fragment may be indicated. After removal of the focus of osteochondritis, the difficulty in walking and the pain usually cease even when they were marked and of long duration. (W. A. REECE.)

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Heck, A.: The Results of Orthopedic Treatment of Tuberculous Costitis (Erkrankung der orthopädischen Behandlung der Costitis tuberculosa). *Zeitschr. f. orthop. Chir.* 9, 2, 1918, 50.

In the treatment of costitis prolonged rest from weight bearing and immobilization are the chief requisites. Heliotherapy does not have the certain and lasting effect which is often attributed to it and excessive irradiation frequently aggravates the condition. Moreover heliotherapy alone does not overcome the pain of acute costitis. Fresh air treatment which is possible when an ambulatory plaster cast is used, is much more beneficial.

Heck is able to re-examine 30 patients from the Munich clinic after a period of from three to ten years. In half of the cases the condition developed in the first decade of life. One hundred are old cases. Seventy-four per cent of these patients were cured, 15 per cent remained uncured, and 1 per cent died. In non-suppurative cases the period of healing ranged from 1 and one-half to three years. In suppurative cases it ranged from four years. The younger the patient the more favorable were the results.

Suppuration and fistula formation are not contra-indications to the cast treatment. The position—extension with slight abduction—was as good as in the cases which came for treatment early. Ankylosis which had been present from the beginning was often corrected. True shortening never occurred. The functional capacity always remained extraordinarily good.

In conclusion Heck recommends conservative treatment in sanatorium at high altitude.

POWELL (2)

FRACTURES AND DISLOCATIONS

Thomas, H. B.: The Treatment of Old, Ununited Fractures of Long Bones, with Special Reference to the Use of the Osteoperiosteal Graft. *J. Am. M. Ass.* 9, 2, 1918, 399.

The author calls attention to four factors of great importance in the technique of transplantation in ununited fractures of the long bones.

The length of time which should be allowed to elapse between the healing of a compound infected fracture and transplantation.

2. Transplants without fixation by screws, pins, or suture

3. The osteoperiosteal or wafer graft

War surgeons deemed it safe to repair compound infected fracture after a lapse of six months. Later after several flare ups, operation was delayed for one year.

Mild infection is said to stimulate osteogenesis and favor repair but latent infection, if disturbed by operative interference will flare up and render results negative. Army surgeons decided in favor of two stage operation. In the first stage the bed was prepared for the transplant and the wound closed. In the second stage which usually was performed five days later the placing of the transplant was attempted. If infection set in, the wound was opened widely and irrigated with Dakin solution.

All unnecessary trauma must be avoided, an exposed infection may be liberated and that the results. The graft must be prepared with great care and should be made slightly broader than the prepared bed so that it will fit into its bed snugly.

The osteoperiosteal graft is of great value in stimulating osteogenesis. It consists of the periosteum with thin layer of underlying bone. Often such graft will take the place of bone transplant, much trauma being thus eliminated and the chances of infection lessened. The best site from which to obtain such graft is the anterolateral inner side of the upper third of the tibia. The graft is outlined with bistoury and removed with chisel. Its thickness is controlled by the bluntness of the chisel. It is pushed over and round the ends of transplant including its body so that it spreads over the lost bone area and covers the fixed ends of the transplant. This type of graft has been used also when the transplant bridging the gap between fractured ends of two bones has been broken from one of its attachments or has been pulled from a medullary bed.

Delagrange states that the progress of bone repair can be noted in the X ray examination after the placing of the graft. The new bone laid down takes the form of the graft.

A comparison of various methods of bone grafting shows conclusively that the best results are obtained with the osteoperiosteal method.

With regard to the cure of hard ends of old ununited fractures Thomas states that often there is no necessity to denude them thoroughly. Fair alignment is satisfactory.

The postoperative care requires the immediate application of splint. JOHN MITCHELL, M.D.

Romer F. Th. Treatment of the Clavicle Fractured by Indirect Violence. *Lancet*, 9, 3, colv 829.

In the treatment of the clavicle fractured by indirect violence the author secures the proper relationship of the fragments to one another as far as possible by strapping the scapula in position and

leaving the arm free. When this is done, recovery is very rapid and painless, the arm suffers no loss of function and union takes place rapidly and in good position.

The most common site of fracture is the middle third of the bone. The position assumed by the patient is typical of the lesion. In his effort to relax the pull of the sternocleidomastoid on the inner fragment he stands with his head bent down toward the fractured side and to relieve the drag of the arm on the outer fragment he supports the elbow on the damaged side with the hand of the sound arm.

The principle involved in the method of treatment described is the control of the outer fragment by means of the intermediary of the scapula. In order to reduce the deformity the arm on the injured side is raised to a right angle with the body. This brings the outer fragment up to the level of the inner fragment. Romer then stands behind the patient and draw back both shoulders firmly so that the scapula is pushed back as far as possible the arm still being kept raised at right angle. When reduction of the deformity has been effected in this manner apposition of the fragments is secured by fixing the scapula in the position in which it now lies. This is done as follows.

With the injured arm still raised at a right angle thin layer of Ganges tissue or cotton wool is placed in the axilla. The end of long strip of adhesive plaster is then fixed to the top of the shoulder joint, just over the acromion, and brought up under the axilla to the front where it is crossed over the top of the shoulder at the proximal end of the clavicle. This strip which encircles the shoulder joint, is next brought diagonally across the scapula to below its angle. A second strip of plaster about 1½ in. in width, is brought with firm pressure from just above the nipple over the clavicle to below the angle of the scapula, much in the position of an ordinary brace. A third and a fourth strip are applied in the same way so that they slightly overlap each other and cover the entire surface of the clavicle. The arm is then lowered gently.

No support is required beyond that given by an ordinary sling which is worn for the first two days to prevent discomfort from the weight of the arm. The use of the arm is restricted to underhand movements but the patient seldom desires to do more. The injured parts are massaged daily by a skilled masseur for at least a week. The movements of massage can be effectively performed over the plaster. As a rule the sling can be discarded at the end of about ten days. The patient is then encouraged to make more general use of the arm. The strapping is removed at the end of the first four days, and again from time to time as occasion demands. By the end of a fortnight all movements are usually possible, but care is necessary to prevent undue strain such as that of lifting and the pushing of heavy weights. The parts are kept supported by strapping for at least three weeks, even though no pain is experienced on movement.

The advantages to be gained from this method compared with the treatment generally employed lock the entire freedom from the pain caused by keeping the arm and hand rigidly immobile which during the first few days is often very intense and it exceeds any suffering that may be experienced at the site of fracture. In addition, there is no subsequent stiffness of the elbow and forearm and the arm is in use muscle wasting is prevented when the union is complete. The patient is able to dress himself normally during the entire period of convalescence and can use the arm on the injured side for sitting feeding and other simple movement without fear of harm. The period of disability is considerably lessened. The average period of hospitalization when other methods are used is between eight and eight weeks, but is cut to the three weeks when this method is employed. When possible the patient should spend twelve hours flat on his back—especially before reduction is difficult—because as the weight is unable to rotate forward the bones will gradually drop into position and the deformity will be decreased. (WALTER C. L. J. M.D.)

Silberstein: The End Result of the Non-Operative Treatment of Congenital Laxation of the Hip (Die Spätergebnisse der konservativen Behandlung der Luxatio congenita m. p. 1. J. Arch. f. Klin. Chir. 9)

The Lorenz non-operative reduction of congenital luxation of the hip has superseded the radical method of Hoff. The author reports on thirty-five cases. Healing takes place through the shrinking of the capsule which fixes the head in the acetabulum. The development of the iliofemoral cartilage (proved by the X-ray) is also very important in the subsequent functioning of the joint. Good final results

are obtained in 70 to 90 per cent of the cases of unilateral dislocation and in 30 to 60 per cent of the cases of bilateral dislocation. Recurrence is due chiefly to anteversion and frequently the latter must be corrected by osteoclasis in the lower third of the femur.

The first dressing is applied in the adducted position, the second (after about 1 month) in the median position, and the last (after 1 month more) in the abducted position. BUCHHEIM (2)

Lester, E., and Abrams, A. Congenital Luxation of the Tendons of the Lateral Peroneal Muscles (La luxation congénitale des tendons des muscles péroniers latéraux. J. de Chir. p. 915, 1915)

Although traumatic luxation of the lateral peroneal tendons is not unusual, about fifty cases being known, the authors have been able to find in the literature only seven cases of congenital luxation of these tendons. The latter condition may be often unrecognized at its onset and in some cases little or no disturbance of function.

The authors review the normal anatomy of the region. Congenital luxation is due to malformation of the retroperoneal bone, loss or insufficiency of the tendon.

In seven of the cases collected by the authors the malformation was bilateral; in the others it was on the left and only six of the subjects were males; three were females, and the sex of the other was not stated. As a rule no deformities were found in the other parts of the body.

Operative measures are indicated only in cases in which there is considerable disturbance of function. The type of operation will depend upon whether the deformity is due primarily to shallow bony trough or tendon insufficiency. W. A. BRUCE.

SURGERY OF THE BLOOD AND LYMPH VESSELS

BLOOD VESSELS

Odermatt, W. Pain Sensibility of Blood Vessels and Vascular Reflexes (Die Schmerzempfindlichkeit der Blutgefäße und die Gefäßreflexe) *Beitr. N. Chir.* 9: 333

By histologic findings and the results of experiments the fact is established that on and in the walls of the vessels there are nervous elements with motor and sensory function. It must be assumed that there are a tonomotor centers on or in the walls of vessels. The blood vessels are supplied from the sympathetic nervous system. It is known that severe pain may appear in parts governed by the sympathetic nerves. In his own cases operated upon for goiter the author has noted that in some vessels there is marked pain from the ligature while in others there is none. This pain is located in the periarterial tissue rather than in any of the various coats of the artery itself. The vein ligation does not cause pain. From experiments on animals performed by himself and by others, the author makes the following conclusions:

1. Injections into arteries from which the blood cannot flow into the arterioles and capillaries are never painful. The injection of certain solutions into arteries in which the passage is open causes pain in conscious or lightly anesthetized animals in from one and one half to two and one half seconds after the beginning of the injection. This is the time required for the passage of the solution from the point of injection into the capillaries where the pain occurs.

The same injections are accompanied by change in the blood pressure but if the sensation of pain is prevented by deep narcosis the change in the general blood pressure does not occur. The alteration in the general blood pressure consists in simple decrease or simple increase possibly primary decrease and a secondary increase or decrease.

The nature of the change in the pressure seems to depend upon the severity of the irritation. When intravenous injections are given experimental animals the same reaction appeared in about the same length of time. To explain this must presuppose sensitivity of the inner coat of the right heart. Periarterial injections of the same solutions cause immediate pain and change in the blood pressure, while in intraarterial injections the reaction requires from one and one half to two and one half seconds for its appearance. In periarterial injections the pain appears in the periarterial plexus, while in intraarterial injections it is first alienated in the capillary nerves. The pain appears on intraarterial injection, even when the periarterial plexus is damaged, a fact which con-

stitutes further proof that it arises, not in the arteries, but in the capillaries and that the capillaries are not offshoots of the periarterial plexus. Sensitivity to material circulating in the blood is an attribute of the capillaries. On the other hand, the arteries and the arterioles have the specific function of reacting to stretching of their walls with local or general circulatory changes or pain.

II. KOTER (Z)

Vimtrup, B. Studies on the Anatomy of the Capillaries. I. The Contractile Elements of the Vascular Wall of the Blood Capillaries (Beiträge zur Anatomie der Capillaren. I. Ueber contractile Elemente in der Gefäßwand der Blutcapillaren) *B. Med. f. Lager* 9: 333, 46

Vimtrup was able to demonstrate the markedly branching cells previously found by Rouget in the capillaries of living larvae of salamanders and frogs. The protoplasmic processes of these surround the capillaries and produce a constriction by their own contraction. In the dilated capillary the nucleus of each cell is flat while in the constricted capillary it is oval or spherical and protrudes from the surface. With medium contraction Vimtrup was able to demonstrate fibrillar structure in the protoplasm. The contraction always begins in the cell and proceeds toward both sides. The same conditions are seen in the cells and membranae micranta of the dilated frog; the contraction of the former may be produced by stimulation of the ninth or tenth sympathetic ganglion. Transitions to the smooth muscle cell are found in the arterioles and venules.

The suggestion is made that these protoplasmic cells be called Rouget cells. *De vnt* (Z)

Portmann, G. and Dupouy, P. Pharyngeal Aneurysms of the Internal Carotid (Contribution à l'étude des anévrismes pharyngés de la carotide interne) *Arch. med. leg.* 9: 333, 97

Aneurysms of the internal carotid in its juxta-pharyngeal course at the level of the tonsil are often diagnosed as tonsillar abscesses or dento-sarcoma.

The case reported by the authors was that of a 68 year old man who had an expansile tumor in the left pharyngeal area back of the posterior pillar. There was no pain and no difficulty in swallowing or talking. The larynx was normal. The superficial temporal pulses on each side were synchronous and the eyes were negative. There was no heart murmur. The Wassermann test was negative. The tumor was a uniform aneurysm.

In such cases there may be symptoms of nerve pressure on one or all of the last four cranial nerves. The authors discuss the pathology of the contents

of the aneurysmal sac. In a fusiform aneurysm the blood shows no tendency to leave any clot deposits on the arterial walls. In saciform aneurysm laminated clots may effect a cure.

Aneurysm of the internal carotid lacks one of the principal symptoms of aneurysm, namely retardation of the pulse on the affected side. Often an arterial blow is heard and felt. All of the other symptoms are those caused by compression of neighboring structures.

The cause is that of all aneurysms—a weakness of the arterial wall. The exciting cause is variable. The condition may follow an acute or chronic infection, tuberculosis, syphilis, gout, auto-intoxication, lead poisoning, alcoholism, etc. Trauma may play part especially in old persons. Congenital aneurysms are known.

Certain physical peculiarities favor the formation of aneurysm of the internal carotid: (1) the large caliber of the vessel, (2) the proximity of bone just before the entrance to the carotid canal, which presents a hard surface against which the artery constantly beats, (3) the low degree of development of the musculo-elastic media at the level of the bifurcation of the common carotid, (4) the twisting course of the vessel, and (5) the lateral and posterior flexion movements of the cervical spine.

In some cases the onset of the condition is very sudden, but usually it is slow and insidious and the pharyngeal tumor is discovered only by chance. The aneurysmal tumor may be both cervical and pharyngeal or pharyngeal and palatine, but never cervical alone. The cervico-pharyngeal type is the classic type. The cervical swelling may appear in front of the ear, on the lateral aspect of the neck, or below the lobe of the ear. The skin covering it is normal, and the tumor shows pulsation synchronous with the pulse. During pressure on the common carotid these pulsations disappear. Pressure is not painful. The soft fluctuant tumor seems deeply situated beneath the sternocleidomastoid muscle. Expansile pulsation and a systolic thrill are usually present. The stethoscope reveals a soft systolic intermittent blow. A ray examination in the neck demonstrates the aneurysmal pulsation. The patient's head is sometimes bent toward the shoulder of the affected side while his face is turned toward the opposite side as in torticollis. They develop into a cervical tumor the aneurysm must first overcome the intermuscular cellular adipose tissue from around the lower portion of the internal carotid out and upward toward the skin surface. It then has considerable volume.

The aneurysm develops easily within and forward toward the pharynx because it is bounded behind by the vertebral column and laterally by the styloid and its attached muscles. It therefore enlarges toward the mouth, pushing the posterior faucial pillar forward. The pharyngeal tumor may then be behind or just at the level of the tonsillar fossa. The expansile pulsation may be felt by placing one finger on the tonsil and another on the neck.

Dysphagia and dysphagia may be present, and fluids may be regurgitated into the nostrils on account of interference with palatal action. The last four cranial nerves and the sympathetic nerves may suffer from the presence of the tumor. Myosis denotes paralysis of the sympathetic nerve, and mydriasis, excitation of the nerve. Laryngeal phenomena may dominate. Hoarseness, breaking voice, and dysphonia from paralysis of the vocal cords are other signs. Compression of the internal jugular may lead to vertigo and syncope and these are increased by digital compression. Only one case of the palatal type has been reported. The pure pharyngeal type like the cervico-pharyngeal type, is minus the cervical symptoms.

Pharyngeal aneurysms of the internal carotid must be differentiated from those of the pharyngeal, all, peritonsillar, tonsillar, pharyngeal tumor, lymphoma, fibrous tumor of the pharynx, adenoma of the palate, vascular tumors, and aneurysms of the vertebral, the ascending pharyngeal, and the inferior palatine arteries.

The aneurysm seldom disappears spontaneously. It usually tends to enlarge and compress surrounding structures. Rupture causes sudden death. It may open externally or internally. Sometimes severe pain develops. The duration of the condition may be several years.

The treatment is ligation of the internal or common carotid. Ligation of the internal carotid presents many difficulties, especially if the aneurysm extends low down to the bifurcation, and is as severe as that of the common carotid.

Measures to maintain low blood pressure and to provoke clot formation in the sac may be used. Iodides may be employed for their action on the vessel wall.

KILLGORE, SEARS, M.D.

Cawadiaz, A. and Cabrera, J. Thrombosis of the Mesenteric Artery. *Lancet*, 1923, cxxi, 949.

The patient presented himself for examination with a history of intermittent claudication of six years duration, recent dyspnea, and paroxysmal pain in the arms and the subternal region of such intensity that physical effort was impossible. Physical examination revealed enlargement of the heart in the transverse diameter, some rhythmical, and systolic murmur at the apex. There was no pulsation in the dorsalis pedis arteries.

Eight days after the examination the patient experienced sudden severe abdominal pain and vomited bluish black material. The abdomen became rigid and tender on pressure. A gas or feces passed per rectum. A diagnosis of mesenteric thrombosis was made. The patient died three hours after his admission to the hospital.

At autopsy eight hours later a blackish discoloration of the lower segment of the ileum, the cecum, and the lower part of the ascending colon was found. The mucosa of the diseased segment of small intestine showed numerous gas bubbles. The intestine as emphysematous and the mucosa cov-

ered with continuous layer of bacteria, chief of which was a gram-positive bacillus. In the circulatory system atherosclerosis of both coronary arteries and marked thrombotic changes in the thoracic and abdominal aorta were found. The iliac arteries were completely calcified and markedly narrowed. The left femoral artery was completely obliterated by a thrombus. The superior mesenteric artery was hardened and obliterated above the origin of the right superior colic artery. The small mesenteric veins were filled with blood and contained many gas bubbles. The liver was anemic and light brown.

In this case mesenteric thrombosis followed plain arterial syndrome but was not preceded by symptoms of abdominal atherosclerosis. Although the vessel thrombosed was not a terminal vessel, the anastomotic channels were not sufficient to establish a collateral circulation. With obliteration of the mesenteric artery the pressure in the veins increased and a retrograde inflow from the portal vein territory was provoked. As a result, hepatic anemia developed. Diminished resistance of the intestinal mucosa resulted in growth of the bacillus phlegmonous emphysematosa.

WILLIAM J. PICKETT M.D.

Baerger, L. The Operative Treatment of Embolism of the Large Arteries. A Report of Two Cases. *Surg. Gynec. & Obst.* 93, XLVII, 463

The diagnosis of the presence and location of a clot in the upper extremity is not difficult. In cases in which a clot occurs in the lower extremity the surgeon must be guided by the limitation of the change in color and temperature and the presence or absence of pulsation in the anterior and posterior tibials, the dorsalis pedis, and other vessels.

The author reports the case of patient suffering with chronic endocarditis who experienced sudden cramp in the right leg which then became blanched, cold, and gangrenous. No pulsation from the femoral downward could be detected. Amputation was done. On the afternoon of the same day the right upper brachial became suddenly the site of a clot. Six hours later the artery was exposed under novocaine and the clot felt in the vessel about the level of the origin of the superior profunda. A longitudinal opening was made in the vessel and the clot and an accretion clot were removed. The vessel then being closed with fine silk suture. Pulsation in the radial and ulnar arteries and color and warmth of the member returned at once. The wound healed by primary intention. Seven days later the patient developed an embolus of the iliac artery on the left side, but refused operation. Gangrene developed and ten days later cerebral embolism and death occurred.

A second case is similar except that the patency of the vessel could not be restored for some distance below the site of the thrombus. Thus, as the case of a man who developed an embolism of the right brachial artery three days after an operation for gangrenous appendicitis. The vessel was opened

and the clot removed. Pulsation returned to the brachial artery below the site of the clot but was not present in the radial artery. This seemed to indicate that secondary clots had lodged in the peripheral vessels. The thumb became cyanotic and was later removed. Trophic disturbances over an area on the back of the forearm and muscular palsy developed. The brachial wound showed evidence of induration and deep infection inolving the musculospiral and ulnar nerves. A blood culture was positive for hemolytic streptococci. The patient recovered and left the hospital. Median and ulnar nerve lesions improved to complete recovery following electric stimulation and exercise. Seven months later the radial pulse had been re-established probably through collaterals.

Operative removal of an embolus should be carried out early before a toxic element or bacteremia may vitiate the result and before the original clot can grow by stagnation or fragments are broken off.

WILLIAM J. PICKETT M.D.

BLOOD AND TRANSFUSION

Unger, L. J. The Transfusion of Blood from Immunized Donors. *Laryngoscope*, 93, XXVII, 45

The author discusses the value of blood transfusion in cases of sepsis, and as a result of his observations concludes that transfusion should consist of whole non-citrated blood from donors of the same group as the recipient who have been immunized by huge doses of a vaccine made from the culture of the septic patient's blood. "Starting with an initial dose of billion, daily injections are given and as much as 100 to 50 billion organisms are given in a week. These donors develop demonstrable immune bodies. It requires nine or ten days for a donor to develop immune bodies.

Unger reports 106 transfusions performed in sixty-four cases of bacteremia. In forty-two cases the blood of an ordinary healthy person was used. Nine of the patients recovered. In the second group of seven cases, the donors were vaccinated with the organism obtained from the patient's blood. None of the patients recovered. In the third group, of fifteen cases, eight received blood from a donor who had been immunized with the organism obtained from the blood of some other patient (three recovered). Seven were transfused with the blood of a donor who had been immunized with the organism obtained from the patient's blood five of these recovered.

The author states that sodium citrate markedly diminishes the complement in blood which plays an important rôle in destroying bacteria. That it extracts from the cells of the red blood cells a substance which renders the plasma anticomplementary that it reduces the phagocytic index and that it destroys the opelmins in blood. He does not advocate the basis for these statements.

SEYMOUR L. KOOB M.D.

Stegemann, H.: Hemostasis Induced by Blood Transfusion (Blutstillung durch Bluttransfusionen). *Arch f Klin Chir* 9 2, 1921, 759

The author reports experiences with blood transfusion in Kirschner clinic. The cause of the hemorrhage in five cases was the opening of peritoneal abscess, re-fracture of the femur for faulty union, gastro-enterostomy for ulcer of the stomach, gastro-enterostomy for ulcer of the duodenum, and resection of the stomach for gastric carcinoma. In one case each. Ten cases were complicated by hemophilia. In three cases of ulcer the hemorrhage was spontaneous. Adrenaline, hemostatics, and coagulants (reused without result) only blood transfusion arrested the hemorrhage. Transfusion is indicated in parenchyma tons bleeding, not bleeding from small vessels. In hemorrhage from large vessels the local surgical methods of effecting hemostasis are unobtainable.

Transfusion operates directly by adding to the blood the substances necessary for coagulation particularly vasoconstricting substances, and acts indirectly through the irritation induced by the foreign blood which causes these substances to appear in the body of the patient by acting on the cell processes concerned in coagulation.

The field of usefulness of blood transfusion includes all cases of hemophilia and hemorrhagic diathesis in which the substances necessary for coagulation are lacking. So severe postoperative hemorrhage. Transfusion before operation as prophylactic measure to increase coagulation is to be considered only in the cases of known hemophiliacs.

Stegemann recommends direct transfusion with Obelacker apparatus. This method secures to them in simplicity, reliability, and accuracy of dosage. Ten cubic centimeters coagulation, 200 ccs are sufficient. Ten increase the supply of blood, larger amounts necessary. (Lusky O.)

Sidbury, J. B.: Transfusion Through the Umbilical Vein. I. Hemorrhage of the Newborn. Report of a Case. *Am J Dis Child* 9 2, 1921, 200

Sidbury gives brief history of transfusion for hemorrhagic disease of the newborn, describes the routes which have been used, discusses the etiology of the disease and reports a case he treated by transfusion through the umbilical vein. He makes the following conclusions:

The umbilical vein may be patent and accessible for transfusion up to, and including the fourth day of life.

If patent, the umbilical vein is the most accessible vein up to the fourth day.

The danger of the formation of a clot in the umbilical vein is very slight.

Transfusion through the umbilical vein in cases of intracranial hemorrhage may increase intracranial pressure.

Transfusion through the superior longitudinal sinus is comparatively simple for one who is ex-

perienced, but the umbilical route is best for one who is inexperienced in the use of the sinus route.

In infants as young as one or two weeks, the median umbilical vein is always large enough to admit an 18 gauge needle and its use is generally preferable to that of the superior longitudinal sinus though it must be dissected out. (E. C. Rossmore, M.D.)

MacAdam, W., and Shikha, G.: The Cholesterol Content of the Blood in Anemia and Its Relation to Splenic Function. *Quart J Med* 9 3, 1921, 93

The authors have followed the changes in the cholesterol content of the blood after splenectomy in three cases of hemolytic jaundice and one of splenic anemia and have attempted to correlate any variation in the fragility of the red corpuscles, etc. in these conditions. At the same time they have carried out an investigation on the total cholesterol of both plasma and red corpuscles in a series of twenty-five cases of diseases of the blood. Of these different types of anemia except in cases of polycythemia.

They draw the following conclusions:

The cholesterol content of the blood plasma is diminished in anemic conditions, although the decrease is not so striking unless the red cell count is less than 50 per cent of the normal. In anemic grades of anemia there is some decrease in the cholesterol of the red cells, but the cell content is much less subject to variation than that of the plasma.

There is no noteworthy difference in the blood cholesterol in cases of secondary and pernicious anemia nor do the leucocytes appear to be correlated with variations in the plasma cholesterol.

After removal of the spleen in cases of familial acholic jaundice and splenic anemia there results a gradual but very considerable increase in the total cholesterol content of the blood plasma. Like that of the corpuscles, the plasma relatively remains unchanged. Thus in the cases of hemolytic jaundice the cholesterol of the plasma three months after splenectomy are 60, 34 and 59 per cent as compared with 0.000 and 0.001 per cent before operation.

Although splenectomy is followed by progressive improvement in the red cell count, the increase in the lipids of the plasma appears not to be related to any change in the corpuscles themselves so far as our data go. Their abnormal fragility in hemolytic jaundice persists three months after removal of the spleen, although the ascitic fluid and the urobilinogen disappear within ten days of operation.

There is no evidence that an abnormally large combination of cholesterol in ester is a factor in the production of anemia, and the decrease in the unsaturated fatty acids of the blood following splenectomy in cases of anemia recorded by King, even if confirmed, does not appear to be related to the increase in cholesterol.

The evidence pointing to a very considerable increase in the cholesterol of the blood plasma after

splenectomy in hemolytic jaundice seems conclusive, but the relationship of this hypercholesterolemia to the cessation of splenic function is quite undefined.

Monats H Kurz MD

LYMPH VESSELS AND GLANDS

Bonn R. The Symptom and Treatment of Traumatic Subcutaneous Extravasation of Lymph (*U. Klinik und Therapie der subcutanen traumatischen Lymphextravasate*) *Deutsch. Zeitschr. f. Chir.* 9, 1911, 55

The rare clinical picture of subcutaneous traumatic lymph extravasation Bonn adds four cases. The condition arises through the integumentary penetration of blunt force which causes the formation of pocket between the skin and fascia. Among the author's cases there is one that is etiologically significant in that the extravasation was brought about by massage. The elasticity of the skin is of importance. The less it is, as for example in children due to scars and eczema, the slightest trauma may be sufficient to produce the condition.

The fact that only lymph is collected is to be explained by thrombotic closure of the blood vessels by the trauma. The non-flowing coagulating lymph slowly forms the lymph cyst which in its early stage is recognizable only from the abnormal mobility of the skin.

The peculiar localization of the cases into small children and the lymph extravasations are associated with therapeutic procedure. Small cysts are easily punctured and compression bandaging applied. In the case of medium size must be extirpated. Large cysts are best treated by wide opening

followed by the application of iodine to destroy them. Puncture fails to effect a cure because of the absence of the aseptic hyperemia caused by the blood, which is necessary if the walls are to grow together.

Koenig (L)

MISCELLANEOUS

Unger J. Indirect, II. Continuous Intravenous Infusion (*Leber intravenöse Dauerinfusion*) *Therap. d. Gegenw.* 9, 1910, 5

Continuous intravenous infusion as recommended by Friedemann and Loewen was tried as a last resort in eighty-two cases, those of children and adults. Eighteen of the patients lived. The quantity of the liquid given in twenty-four hours varied from 3 to 15 liters. The infusion was usually continued for one or three days, but in exceptional cases was given for four or five days. The technique was the ordinary one. After excision of the cannula was tied to the ulnar vein and the cannula placed on a straight splint. The fluid was given at the rate of from 60 to 100 drops per minute. Special nursing apparatus was dispensed with since it could be easily left to the body to raise these few drops per minute to body temperature.

The main indications were gray collapse, extensive burns, and marked dehydration (typhoid and ventricular shock). When the hemoglobin is low and in cases of hemorrhage or where it is necessary with regard to the quantity given. Undesired sequelae were eczema, poststatic pneumonia, and thrombosis of the arm vein. The last mentioned never caused any further complication.

Ki (L)

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE; POSTOPERATIVE COMPLICATIONS

Grenstad, H. The Importance of Grippe in the Development of Postoperative Complications, Particularly Postoperative Sepsis (*Die Bedeutung der Grippe fuer die Postoperatives postoperativ er Komplikationen, insbesondere postoperativ er Sepsis*). *Arch f Klin Chir* 93, 1928, 96

Grippe is surgically important as much in the development of postoperative complications in its immediate surgical complications. The former are due principally to the weakening of the organic defense against pathogenic bacteria. Therefore during an epidemic of grippe surgical interference should be restricted to absolutely necessary operations, especially in cases of disease of the upper respiratory tract. It is of great importance also as on Halberer states, to inquire whether the patient has had an attack of grippe during the past four months. Patients with grippe should be isolated, and during an epidemic of grippe surgical patients should be carefully protected against every possibility of infection.

RALPHORIS (L)

ANTISEPTIC SURGERY TREATMENT OF WOUNDS AND INFECTIONS

Young, H. H. White, E. C. Hill, J. H. and Davis, D. M. A Further Discussion of Germicides and their Presentation of a New Germicide—Merocyl. *Surg Gynec & Obst* 93, 1921, 261

While the position of mercurochrome as a germicide has been established further search has been made for an ideal germicide with sufficiently low toxicity to permit its use in body cavities with little irritation of delicate tissues and penetrating power without staining. Merocyl has some of these desirable features in common at the expense of others. It is free from staining qualities and is more powerful as a germicide than mercurochrome. However its toxicity is higher; it has a greater precipitating action on protein, and has no apparent power to penetrate tissues.

Merocyl should be regarded as a complement of mercurochrome rather than a substitute for it.

The authors give a detailed description of the chemical structure and physical properties of the drug and of the methods used to demonstrate its penetrating power, its toxicity and its action was chiefly against bacillus coli, staphylococcus aureus, and the gonococcus.

Merocyl has been used in the otological wards of the Johns Hopkins Hospital and has been found for its germicidal power and its non-staining and non-irritating properties.

In three cases an attempt was made to sterilize an infected kidney pelvis by irrigation with a 1:1000 solution of merocyl through a small tube lead in the pelvis at time of operation. Only one case was benefited, but as the presence of the foreign body may have been the deterrent factor the method should be tried further.

In series of cases of acute gonorrhea it was found that merocyl is the most powerful gonococciocide available, but like other drugs is unable in many cases, to reach the gonococci.

Merocyl has been used to irrigate catheters and urinary drainage tubes, for instillations before and after instrumentation, and for injection through urethral catheters just before their removal. It has seemed to prevent infection in these cases, particularly when used before and after the passage of sounds.

In wounds in which infection is especially feared, as in cases of hypospadias in which there were small, uncovered areas or drains, skin grafts are used or separation of the skin edges occurred, merocyl has been used as a wet dressing. Dakin's solution is preferred as long as necrotic tissues are present as merocyl does not destroy sloughs nor act as a deodorant.

Merocyl solution has been used to irrigate wounds in deep infection but without necrotic tissue. When Dakin's solution was used, non-tuberculous wound healed uninterrupted. Tuberculous wounds remained clean, although healing was not noticeably hastened. The solution did not retard granulation. It did not irritate the skin. A 1:1000 solution was used.

In the treatment of ordinary chronic cystitis, if merocyl marked improvement was noted.

In the treatment of postoperative cystitis, the urine, if not sterilized, is often improved and made macroscopically clear. In cases not reacting satisfactorily deep infections of the prostate, seminal vesicles or kidney are found, or the infective organisms were harbored by diverticula.

Reports from the Department of Otolaryngology of the Johns Hopkins Hospital lead to the conclusion that the drug is of value in treating infections of the ear, nose and throat, probably also the eye and in dentistry. It has greater germicidal potency than mercurochrome and consequently can be more effective when the bacteria can be reached by application or irrigation. However because of its greater power of tissue penetration, mercurochrome is probably more effective for deep infections such as those in sinuses or glands.

The details of technique and the selection of the solution strength for merocyl in the treatment of wounds and inflamed mucous surfaces has not been

fully established. The frequency of irrigation necessary for the best results has not been fully worked out, nor has it been definitely determined in which cases mercuryl is to be preferred to Dakin solution or other standard antiseptics. However the results have been sufficiently definite to promise of wider usefulness for this antiseptic.

V E DUDMAN, M D

Aschoff, L., and Reinhold, O. Changes in the Motor Ganglion Cells in Wound Tetanus (Die Veränderungen der motorischen Ganglienzellen beim Wundstarrkrampf). *Veröffentl. d. Kaiser-Krankenhosp. d. 922 m. 5*

In eleven cases of wound tetanus the brain-stem and spinal cord were systematically examined and sections were made of the elongated cervical, thoracic, and lumbar cord. Changes in the nuclei and tigroid substances of the motor cells were demonstrated by staining with cresyl violet and pyronin. There was no characteristic picture of tetanus, and no other pathologic change. In some instances the structures were entirely normal. In others, there were marked changes without sharp demarcation but postmortem decomposition was responsible for these. Proving this, were the observations on hemolysis made in the canals of the brain and cord which were due to the solution of hemoglobin in the juices of the ganglion cell nuclei.

KREUZER (7)

ANESTHESIA

Dale, H. H. Hadfield, C. F. and King, H. The Anesthetic Action of Pure Ether. *Lancet* 9 3 OCT 1914

Dale, Hadfield, and King review the literature on ether as an anesthetic since its early use in 1846. It is generally believed that the active principle in the induction of anesthesia is diethyl ether. From a series of experiments on animals and an investigation in clinical cases the three conclude that the ether of choice for anesthetic purposes is ether which is free from all by products and contaminations.

This conclusion is directly opposite that of Barker and Hamor reported in 9 1 and that of Cotton reported in 9 7. Cotton claims that by experiment he determined that pure ether becomes fit for anesthesia only after the addition of ethylene gas, 5 per cent and carbon dioxide, 5 per cent. The use of ethylene gas as an anesthetic agent is very old, having been suggested by Nunnally of Leeds in 1849. Lombard uses cotton process ether and states that ethylene acts as an asphyxiant like nitrogen.

Wallis and Hiewer in a paper published in 1913 claimed that pure ether freshly prepared will not produce surgical anesthesia, even when large quantities are used, but that after certain ketones are added to it, it becomes a very splendid anesthetic devoid of many of the objectionable features of ordinary anesthetic ether.

The authors describe the preparation of the pure samples of ether in detail. Some of them were made from ethyl alcohol, some from ordinary ether and some from ethanacol. The clinical results observed in the use of these samples were practically the same in both patients and animals. The manner in which the pure samples were obtained differs slightly from the processes used by others.

Several packages of ethanacol purchased on the open market were found to contain 95.5 per cent ether, 4 per cent butyl alcohol, 0.5 per cent alcohol, and an aldehyde. According to the numbers and markings on the bottles, the various samples probably came from different lots. No ketones were found in any of these samples. REV MORLEY, M D

Hock, J. G., and Peyton, S. M. A Study of Isoagglutinins Before and After Ether Anesthesia. *J Am Med Ass* 9 3, 1914, 670

According to Levine and Segall, prolonged etherization may cause a temporary change in the isogglutinative phenomena. As the authors had never observed untoward results from transfusions following ether anesthesia when the bloods were matched before the operation, studies were made by them to determine whether there was a change in the isogglutinative phenomena, and if so, why noticeable effects were not obtained in the cases of patients given transfusions after prolonged ether anesthesia. Twenty-five patients about to undergo operations were selected for this study. From the findings the authors draw the following conclusions:

There is no change in the blood groups after ether anesthesia.

No change of isoagglutinative phenomena was produced by shaking with ether for one hour or by four hours contact at 37 degrees C.

Transfusions can be performed safely within twenty-four hours after prolonged ether anesthesia provided a suitable donor was found previous to the beginning of anesthesia.

Severe reactions from transfusions after ether anesthesia are due apparently to some other cause than a change in isoagglutinative phenomena.

E C ROBINSON, M D

Frel, W., and Grund, H. The Theory of Narcosis (Beitrag zur Theorie der Narkose). *Zucker f d ges exper Med* 9 3, 1914, 350

Like Winterstein, the authors define narcosis as a condition in which the property of living substance to react is decreased by a chemical agent. Within certain bounds, the intensity of narcosis varies directly with the concentration of the agent used. All cells can be narcotized, but of the processes between the narcotic agent and its effect we know nothing.

In all methods of inducing narcosis, the narcotic must become mixed with the body fluids. Part of it must therefore be diffused in the cells, especially those of the nervous system, the quantity depending upon the solution, absorption, and chemical affin-

lines The vital processes of the cell may be influenced physically physico-chemically or primarily chemically. Even marked disturbances in cell metabolism are possible without chemical changes.

The authors studied a number of little known and not yet used narcotics to find the relation between their physical or physico-chemical properties and their narcotic effect. These substances were derivatives of salicylic and barbitalic acids. Determinations of the solubility of the salicylic acid derivatives resulted in a grouping somewhat different than that to be expected from Orvinton's determinations of its solubility in olive oil and water. An isopropyl ester decreased the water solubility more than two ethyl groups. The ethyl groups decreased the water solubility more than the alkyl groups, and iso-amyl more than isopropyl.

With regard to surface tension the experiments affirmed the already known fact that the introduction of an alkyl group into the sequence methyl, ethyl, isopropyl decreases the surface tension and this effect is made considerably greater by two alkyl groups. If narcotic power depends on surface tension then substances which are of narcotic in themselves but increase or decrease surface tension must be able to influence narcotics positively or negatively.

Regarding the influence of the chemical structure on diffusion, the experiments demonstrated again that the alkyls, which often cause a similar change in the properties of a compound, occasionally change a property positively or negatively depending upon the solvent in which they are bound.

A comparison of diffusibility and solubility and surface tension showed that the salicylic acid series diffused through the lipid portion of the membrane

and that in the barbitalic acid there, as a parallel from between diffusibility, surface activity and ester solubility.

The relative narcotic power, as studied in various animal experiments. In the salicylic acid series the isopropyl combination was strongest but all were surpassed by the alkyl combinations.

The power of the salicylic and barbitalic acid combinations was also measured for beginning narcotics and for paralytic and lethal doses. In the case of the salicylic acid derivatives the relation of the narcotic effect to the chemical structure and the chemico-physical properties was found to be complicated. Surface activity and physiological efficiency were parallel or changed one another. Water solubility and diffusibility were found to correspond to the narcotic effect, a good ester solubility, poor diffusibility, and good narcotic properties. With regard to the barbitalic acid series the conclusion was drawn that every increase in diffusion and surface activity with a decrease of the ester solubility increased the narcotics.

Thus in different narcotics different factors influence the mechanism of the narcotics. At any rate, physical processes influence the quantity of toxin supplied to the cells. The true cell changes, however, are not known. Perhaps the mechanism of narcotics is so complicated that one substance or group of substances acts through lipid changes and another through protein combinations.

Possibly certain disturbances of ferment action are the basis of narcotics, different ferments being inhibited by different narcotics. The asphyxiation theory as an exclusive explanation cannot be maintained.

STERNBERG (7)

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Scott, S. G. A Method for the Opaque Meal Examination of the Stomach. *Proc Roy Soc Med Lond* 93 XI, Sect Electro-Therap 35

After trying out a number of methods for the examination of the stomach by means of opaque meal and the roentgen ray the author has come to the conclusion that the method of choice is systemised roentgenoscopic examination as this will reveal not only the grosser lesions but also very small gastric and duodenal ulcers and is rapid, accurate, and relatively inexpensive. In over 94 per cent of the cases which have passed through his department within the last three years it has led to correct diagnosis which was confirmed by operation or autopsy. The details of his technique are as follows.

A vegetable purgative preferably castor oil is administered thirty-six or forty-eight hours before examination and the patient then put on a light diet but not starved. The last meal, which consists of fluids, should not be taken less than an hour before the examination. A barium cream of variable thickness to meet different indications made with gum tragacanth and flavored with saccharin and oil is given. The progress of a small portion (3 to 4 oz.) is observed as it passes down the oesophagus, the patient being in the upright left oblique position. Its entry into the stomach is noted and minute and systematic examination of the entire

lumen of the stomach and duodenum is made with the aid of careful palpation and turning of the patient to bring the different parts into view. All of the meal is given if desirable. In a few cases an examination in the horizontal position is made. Films are made to serve as records or as demonstrations to the surgeon. Repeated examinations are rarely indicated as obstructions to the entry and passage of the meal are usually observed at the first examination. At all times the patient and operator are properly protected and the examination is conducted as expeditiously as possible. *WOLFGANG HARTUNG M.D.*

Duane, W. Measurement of Dosage by Means of Ionization Chambers. *Am J Roentgenol* 93 2, 190

The fact that different roentgen ray plates produce different roentgen ray plates is produced by different intensities and effects of different lengths even though they may be running at the same voltage as estimated by sphere gap and at the same current through the tube indicates that something connected with the roentgen ray beam itself must be used for the accurate estimation of dosage. Without doubt, ionization chambers provide the most reliable methods of

measurement at the present time. Ionization chambers are by no means perfect, however, and great care must be exercised in employing them.

In this article the author describes the principles involved in ionization chambers and enumerates various errors which are dependent upon their construction. In order to test the suitability of a standard ionization chamber it is necessary to make sure first that the ionization current is saturated, and, second, that it includes practically all of the secondary radiation coming from the molecules of gas struck by the primary beam.

The large standard ionization chambers are not suitable for measurements of the intensity during a treatment. One of the smaller ionization chambers is usually used. The intensity of the ray is measured at the surface where they enter the patient's body and also where they emerge. This gives an estimate of the secondary radiation coming from the patient's body but the estimate is too low. Estimates may be made by means of water phantoms, the small ionization chamber being placed in the water itself. This estimate is always too high. The exact dose received by the patient's skin lies between the two. The estimates of the secondary radiation from different patients made from measurements taken during the treatments have been quite variable. The secondary radiation appears to depend not only upon the size of the portal of entry but also upon the size of the patient and the shape and content of the portion of the body radiated. In estimating erythema doses all of these factors must be taken into consideration. The safest method appears to be to make the measurements while the patient is being treated.

A great many important investigations have been carried on in connection with the question as to whether the biological effect of the roentgen rays are proportional to ionization currents when ray of different wavelengths are used. The term "biological dose" is used. In particular cases biological doses are definite quantities. Before the term "biological dose" may be employed in general, however, it will be necessary to show by experiments that a large number of different biological effects are proportional to each other when roentgen rays of different wavelengths produce the effects.

WOLFGANG HARTUNG M.D.

Kemp, C. The Effect of the Roentgen Rays on Subacute Inflammations (Einige Beobachtungen an Roentgenstrahlen (subakute Entzündungen)). *Deutsche Zeitschr f Chir* 92, 1211, 17

Since 1916, in the Municipal Hospital in Worms, severe suppurations not affected by the usual clinical

methods have been treated with very light doses of roentgen rays. In some cases the ray acts surprisingly well while in others it fails without apparent reason. The author reports several notably influenced cases of purulent suppuration and two several cases of gunshot wounds which were not benefited. On the whole however the results may be regarded as satisfactory. In furunculosis in the axilla the results have been good and there have been no recurrences. Ulcer of the leg which had been treated without result for some time by the usual clinical methods has become clear within forty-eight hours after raying. Good results have been obtained also in pneumonia—two cases are cited.

The doses used for all types of inflammation, even pneumonia, are small. In cases of pus in the abdomen, furunculosis, and pneumonia a single large field is given 20 to 30 per cent of an erythema skin dose for 10 or three minutes. In the author's opinion this dose can be decreased. He emphasizes that in such cases the raying of a single large field is quite sufficient. The raying of one field in the front and one in the back pneumonia he considers wrong because of the danger of an unfavorable effect on the general condition. (Continued)

Landé S. The New High-Voltage X-Ray Therapy (Continued)

The newer roentgen therapy is a further development of the accepted roentgen ray technique based upon the established and well-known laws of tissue absorption and filtration. The highest possible voltages are used to produce a ray of short wave length and great penetrating power and a dense filter (of copper) is used to cut out a large percentage of the weaker and less penetrating rays. This way a greater dose of roentgen ray can be introduced into the deeper parts of the body without injuring the skin and superficial tissues.

The ratio (or percentage) of the number of rays reaching the deeper tissues compared with the number of rays falling upon the skin is termed the depth dose. This ratio must be further modified by the dispersion quotient based upon the physical law that the intensity of light varies inversely with the square of the distance. It may be further modified by a factor which takes into account the secondary rays which may be generated in the tissues by the primary beam. The efficiency of the primary beam being thus increased. The determination of the relation between the number of rays falling upon the skin and the number reaching the deeper tissues is an essential part of the newer technique.

The measurement of the amount of radioactivity at the surface and at various depths is a prime requisite for successful radiotherapy. This may be accomplished by the use of ionization chambers which give sufficiently accurate readings to constitute practical guide to dosage. Enough radiation must reach the cells of the tissue treated to produce the desired results.

The requirements for successful roentgen therapy are a thorough understanding of the fundamentals of radiology and the development of an individual technique embodying a proper combination and balance of voltage, filtration, and time.

The high-voltage technique is especially adapted to deep cancer. Superficial malignancy and benign conditions (both superficial and deep) frequently yield more quickly to the older technique using lower voltages and less filtration.

To illustrate the clinical achievements of the newer technique using copper filtration and prolonged exposures the author reports briefly certain cases in which very satisfactory and in some instances almost miraculous results are obtained. A number of inoperable breast cancers were arrested or clinically cured. In many cases nodules recurring after breast amputation have disappeared rapidly under proper roentgen ray treatment, and lesions which primarily appeared to be inoperable have been rendered operable.

A symptomatic cure was obtained in several cases of sarcoma of a apparently malignant type, three cases of malignancy of the inguinal glands, and several cases of malignancy elsewhere. In five cases of abdominal malignancy the results are very gratifying.

ANNE HARTRO, M.D.

RADIUM

Roth, A. C. and Morton J. J. The Effect of Radium and X-Rays on Enzyme Action. *Am J Roentgenol* 9:3 497

Because of the conflicting evidence relating to the effect of radiation on enzyme action, the authors made an attempt to obtain additional information on the subject. Only the immediate effects were observed. The study of the late effects, though desirable is complicated by the possibility of infection of the solutions.

The edestin pea globulin, and Brett methods were used. Solutions of peptin with hydrochloric acid exposed to radium and the roentgen ray for variable periods showed no differences in peptic power from control solutions. In human gastric juice similarly exposed to roentgen irradiation the findings were practically the same such slight variations as were noted fell within the limits of experimental error.

ANNE HARTRO, M.D.

MISCELLANEOUS

Picard, H. Diathermy in Surgery (Druckverhandlung der Chirurgie) *Deutsche und Österreichische* 3:113 1

The author calls attention to the numerous indications for diathermy in surgical conditions. These include the treatment of malignant tumors and the removal of hamangiomas, telangiectases, and naevi. During the war this method was successfully applied to the treatment of fractures, joint effusions, tendon injuries, and myalgia. Kewer

Levitsky, V.: A Preliminary Report on My Treatment of Cancer (Vorläufige Mitteilung über meine Krebsbehandlung). *Serb Arch f d ges Med* 19 3, xiv, 4.

The author bases the treatment of malignant tumors with amniotic fluid on the following facts:

There is an analogy between embryonic cells and those of malignant tumors. The differentiation between embryonic cells is constant and always the same. Disturbances during embryonic life never cause abnormal proliferation of the embryonic cells and pregnant women are seldom attacked by malignant tumors.

These facts lead the author to attribute the protective power of the amniotic fluid. He assumes that the amniotic fluid contains ferments and hormones with specific action.

The injection of carbolic amniotic fluid into the tumor causes neither general nor local reaction except leucocytosis and diuresis. It is still too early to draw conclusions regarding its effect in the clinical cases reported—one case of carcinoma of the cervix and two cases of carcinoma of the breast. It is remarkable, however, that in one of the cases of carcinoma of the breast the cancer was reduced to half its original size after eight weeks of treatment with the injection of 94 ccm of amniotic fluid into the tumor and the carcinomatous lymph glands. An increase of temperature, lassitude and headache were noted during the treatment and after the injection of large amount of the fluid.

Since only persons affected with cancer react to the injection the assumption is justified that amniotic fluid has a specific effect on carcinoma. The leucocytosis injection is given every second or third day and the amounts of the fluid are increased from 10 to 750 ccm. (7).

SURGICAL PATHOLOGY AND DIAGNOSIS

Churchman, J. W.: The Mechanism of Bacteriolysis. *J f p Med* 1918, xviii, 543.

Gram stain habitually habit the same type of selectivity in Gram positive and Gram negative organisms. The bacteria are placed on media on which the bacteria are placed on media—extensive bacteriolysis of the organism are situated with it before they are placed on plain agar. In this bacteriolysis both in Gram positive and Gram negative are killed and the Gram negative are unaffected.

In Gram positive, pore-bearing colonies and the more common Gram negative bacteria and fuchsin related spores but does not affect the Gram negative type of selectivity. act in when they are placed on the media and the opposite type when they are added directly to the bacteria. In the former case the Gram positive pore bearers are killed and the Gram negative are unaffected. In the latter the Gram negative are inhibited. In the former case the Gram negative are unaffected. Selective bacteriolysis is not necessarily connected with selectivity. penetrates the killed organ-

isms may grow and dyes which do not stain well may inhibit reproduction.

There is evidence that the phenomena of bacteriolysis may be due to changes effected by the dye at the surface of the micro-organisms.

SAMUEL KARR, M.D.

Seyfarth, C.: Trephination of the Sternum. Simple Method of Removing Bone Marrow for Diagnosis During Life (Die sternum trepanation, eine einfache Methode zur diagnostischen Entnahme von Knochenmark bei Lebenden). *Deutsche med Wochenschr* 9 3, xiv, 180.

In diseases of the hematopoietic system—latent malaria and kala azar—puncture of the spleen or liver has been done to establish the diagnosis. However, as rupture or hemorrhage of the spleen sometimes followed diagnostic puncture resort to other methods became necessary.

During his practice at malaria hospital from 1906 to 1918 Seyfarth found in autopsies on the bodies of persons who died from malaria that the best material for study was obtained from the short flat bones. As proof of this he mentions the fact that in adults the marrow of the long bones has changed at 10 years while the flat bones, particularly the vertebral ribs and sternum, contain living cellular marrow. He therefore removed it from the sternum and ribs. In the material so obtained he found the disease-causing bacteria. Some of them were free while others were contained in the reticular endothelium, capillary endothelium, and other cells of the bone marrow.

Under local anesthesia a longitudinal incision 5 cm long was made over the sternum at the level of the third and fourth ribs, a small trephine was then used and the marrow was removed with a sharp platinum spoon. The wound was closed with skin clamps and an adhesive plaster dressing.

Trephination of the ribs to obtain material for examination should be done only exceptionally as it interferes with the recumbent position. When it is done the area between is to the scapular or posterior axillary line of the seventh or eighth rib.

PEREZ (2)

MEDICAL JURISPRUDENCE

Care Required of Hospital in the Treatment of the Eye. *Derrick vs Portland Eye Ear Nose and Throat Hospital* 209 Pac 2d p 144.

This was an action to recover \$1,000 for alleged negligence resulting in the loss of the sight of the plaintiff's right eye. On the trial the plaintiff recovered judgment for \$3,000 from the judgment the Hospital took an appeal alleging several errors.

The record shows that the defendant hospital by its nurse applied to the plaintiff's eye a drug called eucaine instead of the drug known as atropine which was prescribed by the physician. There was expert testimony that the effect that eucaine when applied to the eye is a painless drug if the eye is

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

McIver M. A., and Harknett, W. W. Traumatic Shock. Some Experimental Work on Crossed Circulation. *Surg Gynec & Obst* 1933, LXVI, 543

The experimental work reported in this article was based on the theory that toxic substances taken up by the circulation from a traumatized area might be instrumental in the production of shock. This has been one of the theories which has had many adherents during the past few years. In crossing the circulation of two animals the authors used a technique different from that usually employed. Cats were used for the experimental work.

An attempt was made to cross the entire circulation. Following traumatization of the lower limbs, an anastomosis was made between the aorta and one caudal above the bifurcations. After the anastomosis had been effected the traumatized extremities were amputated. The anastomoses were made by means of paraffined glass cannulae. A mercury manometer was inserted in the carotid artery and the blood pressure recorded during the entire experiment.

The animal was considered to be in shock when the systolic pressure was persistently below 70 mm. Hg. The character and rate of the pulse and respiration, the color of the mucous membranes, and the general condition of the animal were noted. Manipulation of the traumatized limb and even gentle massage lowered the blood pressure. Severe trauma was also followed by sudden lowering of the blood pressure. In a few cases there were no evidences of shock, the blood pressure remaining well above the shock level after an hour and a half.

Seventeen complete experiments were made. Of twelve animals in which the muscles of the thigh were completely traumatized, nine developed the typical picture of shock within thirty minutes. In three cases there were no evidences of shock. Five animals were used as controls, the same crossed circulation being made but the amputated limbs not being traumatized.

The authors conclude that these experiments justify the opinion that some substance capable of producing shock was taken up from the traumatized area by the circulation. HANSON M. CARY, M.D.

Robertson, B., and Boyd, O. The Toxemia of Severe Superficial Burns in Children. *Am J Dis Child* 1933, LXV, 63.

In cases of superficial burns the problems encountered are primary shock and toxemia.

If the primary shock is so severe that death may result within a few hours of the injury treatment

directed toward its relief is apt to be disappointing. In many cases primary shock is mild or absent.

Following a period of general good condition lasting from twenty-four to forty-eight hours, the temperature may rise and toxemia develop. The patient then becomes drowsy, the pulse more rapid, the circulation depressed. In cases in which recovery results the temperature and toxemia subside about the fifth day and the treatment becomes local.

In the more severe cases the temperature may rise to 106 degrees F and the toxemia may be increased. Goutting may be present, the pulse soft, the color dusky or livid, and muscular twitchings and convulsions may develop. In one of the convulsions death may occur. The severity depends upon the area, depth, and location of the burn and the age of the patient.

In seven cases reviewed the urine contained little albumin, the leucocytes were increased, and the non-protein nitrogen varied from 49 to 99. It is probable that the increase in non-protein nitrogen is due to increased tissue destruction rather than to defective kidney elimination.

To relieve the toxemia, local treatment such as the removal of large areas of tissue was found impractical as the areas involved were too large or involved the face or the patient was admitted in toxic condition. The effect of large doses of sodium bicarbonate in combating acidosis seemed favorable.

To remove the toxin in the blood the operation of exsanguination-transfusion was devised, the object being to withdraw a much larger amount of blood than could be done by venesection and to replace it with fresh adult blood. The amount of blood withdrawn ranged from 500 cc in an infant to 500 cc in a child of 3 years.

The results were considered encouraging. Of ten patients with convulsions treated by exsanguination-transfusion seven recovered. Herein previously no patient had recovered after convulsions had been precipitated by burn toxemia.

Experiments showed that circulating toxic material is produced in increasing amounts for from twenty-four to thirty-six hours as a result of the burning of living tissues. Chemically the toxin consists of primary and secondary proteoses. It is made up of necrotoxic and neurotoxic proteins, the former being thermostable and diffusible and the latter thermolabile and colloidal.

No evidence of antibody production was found although this was reported by Katsenoff who based his conclusions on the beneficial effects of convalescent serum from burned patients in fourteen cases of toxic shock. A. R. BRYAN, M.D.

proper condition that its effect is to contract the pupil while tropine expands the pupil.

A skilled specialist had previously performed operation upon the eye as the treatment of a traumatic cataract resulting from injuries sustained a few weeks prior thereto by reason of the penetration of the eyeball by a nail. The operation was called "excising the eye" its purpose being to absorb the cataract. Following the operation the specialist prescribed application of tropine very frequently and instructed the nurses in the hospital as to how it should be applied. The Supreme Court of Oregon held that there was sufficient evidence in this case for the jury to find upon the judgment against the hospital approved. *WILLIAMS v. HOSPITAL*.

Malpractice in Reduction of Fractures. *Brink v. Hester*, 99 N. D. R. 2 p. 800.

In this case the plaintiff recovered verdict of \$3,500 against physician and surgeon for malpractice. This was reduced to \$1,800 by the trial judge so when the physician appeared. The plaintiff fractured both bones of the right leg seven inches above the ankle. The defendant placed a cast on the leg and attended the patient for about two

months. When the cast was removed there appeared to be a bump at the point of fracture, but the physician assured the patient it would disappear within a year. Another doctor then consulted advised an immediate operation. The bones were broken and re-set and about six months thereafter the leg was serviceable.

The fracture of the tibia was oblique. The alleged negligence consisted of failure to make an X-ray examination in the diagnosis, failure to use fracture box, the use of casts which did not extend above the knee and failure to employ extension weights.

The expert who testified for the plaintiff was graduate of an osteopathic school of medicine and had a license as osteopath. He is also graduate of an allopathic school and had practiced as an allopath for six months after graduation. He testified that both in teaching and practice the diagnostic and treatment of bone fractures were identical in the two schools.

In reviewing the case the Supreme Court of Minnesota held that there could be no question that the verdict was amply supported by the evidence. It therefore affirmed the judgment.

WILLIAMS v. HOSPITAL.

Nose

- The correction of saddle nose F CROSTICH *Polska gaz lek* 923 1, 950
- Plastics for wry nose E ERTNER *Med Klin* 9 3, xii, 32
- Some pathological nose and throat conditions of interest to both dentists and rhinopharyngologists O A LOTNICK *Dental* 31 & 5 J 923, clxxxviii, 596
- Rhinopharyngitis: their rôle in contagion and the development of several infectious diseases J CARLES J de med de Bordeaux, 9 3, xcv 1
- A case of ichthyosis of the mucous membranes of the nose and lips associated with long-standing and severe epistaxis J W MILLER *Laryngoscope* 9 3, xxxiii, 367
- Paranasal sinuses F W GARDNER *Am J Clin Med* 923, xiii, 3 1
- Nasal accessory sinus disease and systemic infection W S SYRIS *Practitioner* 923, cx, 353 [218]
- The treatment of acute sinusitis G B POTTER *Nebraska State M J* 9 3, viii, 68
- A case of recurrent suppurative frontal sinus disease F W THOM WILLIAMS *Lancet*, 923, cxv 956
- The radical frontal sinus operation, with report of cases F O LEWIS *Ann Otol Rhinol & Laryngol* 9 3, xxxiii, 301 [218]
- A trocar cannula for the maxillary sinus R BECKO *Scienze med* 9 3, xiii, 876
- An upper canine tooth in the antrum of Hingham J H PRUD *Brit M J* 923, 2, 897
- Latent maxillary sinusitis J W WHITE *Virginia M Month* 923, ii, 90
- Röntgen therapy of the antrum and frontal sinuses J D O'NEILL *Am J Roentgenol* 9 3, 3, 374
- The radical maxillary sinus operation under local anæsthesia L A SCHNEIDER J *Lancet*, 9 3, xliii, 243
- Infra-orbital sinus operations, osteia and lachrymal sac operations W SCHULZBERG *Med Times*, 923, ii, 4
- The end results of radical operations on the accessory sinuses R H SMITH *Ann Otol Rhinol & Laryngol* 9 3, xxxiii, 30 [218]
- The causes of failure in surgery of the nasal accessory sinuses W M'ROBERT *Laryngoscope*, 923, xxxiii, 37
- Nasal or sphenoidal sinus neoplasms M B BOERVOER *Texas Stat J* 31 923 xii, 35
- Nasal reflex K I RUDIN *Ann Otol Rhinol & Laryngol* 923, xxxiii, 464
- Why adenoids often permanently injure features, nose, and health E S COLIN J *Med Ass Georgia*, 9 3, xii, 93
- Thrombosis of the nasopharynx S G D EVEL *Kentucky M J* 9 3, xii, 5

N Th

- Radium treatment of carcinoma of the lip L T STOD *Med Clin N Am* 9 3, 2, 579
- The surgical operative treatment of cleft palate G V BROWN *Chicago M Rec* 923 xii, 659
- Mucronal stenosis J M FORBES J *Ray Army Med Corps Lond* 923 xi, 364
- Uvular stenosis and its treatment by the intravenous injection of arsenic L A MORCA *Am J Dis Child* 19 3, xii, 134
- The surgery of carcinoma of the mucous lining of the mouth L HENDRICK *Brit M J* 9 3, xii, 110
- A discussion on dental sepsis as an etiological factor in diseases of other organs W WILLIAMS, J. GOSNEY, W. H. TILLY, W. HARRIS and others *Proc Roy Soc Med Lond* 923 xii, Sect Otolaryng 7 [219]

The technique of oral radiography C O SIMMONS *Internat J Orthodont, Oral Surg & Radiography* 923 ii, 390

- Congenital absence of all teeth except two A T PITTS *Proc Roy Soc Med Lond* 923, xvi, Sect Dis Child 43
- Congenital absence of teeth in three members of family A T PITTS *Proc Roy Soc Med Lond* 923 xvi, Sect Dis Child 44
- The pulpless tooth its relation to dental practice A WALKER *Dental Cosmos*, 923, lxxv 479
- A case of Hutchinsonian teeth A T PITTS *Proc Roy Soc Med Lond* 923, xvi, Sect Dis Child 45
- A note on the operative treatment of malignant disease, with special reference to the tongue H J P THOMSON *Lancet*, 923, cxv 95 [219]
- Cancer of the tongue, lips, and cheek V P BLAIR and M J MOSKOWITZ *Internat J Orthodont Oral Surg & Radiography* 9 3, ii, 30 354
- Rarely V P BLAIR *Ann Surg* 9 3, lxxv, 68 [219]
- A case of subglottic oedema due to acute lymphatic leukaemia L H SEITZ *Laryngoscope*, 9 3, xxxiii, 150
- Submandibular intraglandular lumps E B ACERVO *An Fac de med Univ de Montevideo*, 923, vii, 834

Throat

- Phases of chronic pharyngeal infection W S TOMLIN *J Indiana State M Ass* 9 3, xvi, 6
- The tonsils in childhood L T ROYSTER *South M J* 9 3, xvi, 35
- Sensitive fingers and the tonsil H HAYS *Med Times*, 9 3, ii, 26
- The bacteriology of unilaterated tonsils H J ULLMAN and F R NUTON *Am J Roentgenol* 9 3, 3, 396
- Lymphadenoma of the tonsil, the thyroid, and both testicles H L ROCHER and C LAMBERT *J de med de Bordeaux*, 9 3, xcv 54
- A new artery clamp for tying off deep tonsillar vessels A KARR *Laryngoscope*, 9 3, xxxiii, 369
- A consideration of the various problems presented by hæmorrhage occurring in connection with operations on the tonsils F O GOLDSTEIN *Canadian Pract* 9 3, xlviii, 75
- Death following operation for the removal of the tonsils F W BAILEY *Laryngoscope*, 923, xxxiii, 384
- Lessons to be learned from the results of tonsillectomies in adult life: observations in more than 300 cases W C AL ARIZ J *Am M Ass* 9 3, lxxx, 5 3
- Surgical anæsthesia in the treatment of malignant disease of the throat W S SYRIS *Glasgow M J* 9 3, xvi, 319 [219]
- An extralaryngeal blood cyst in a week baby H B DECHARD *Texas State J* 9 3, xii, 4
- Death from acute oedema of the larynx due to boxing A STAY *Zschr f d ges gerichtl Med* 923, i, 693
- The treatment of tuberculous laryngitis by salts of the rare earths of the cerium type G PORTHANN *Med Press*, 9 3, cxv 396
- Laryngeal paralysis associated with the jugular foramen syndrome and other syndromes G B KNEW AM J M, Sc, 9 3, clxxv 727 [220]
- Operative procedures in the treatment of stenosis of the larynx caused by bilateral paralysis of the abductor muscles, with special reference to a new method by means of which it is suggested that the surgery may be permanently enlarged and the patient decannulated J MOSKOWITZ *Proc Roy Soc Med Lond* 923 xvi, Sect Laryngol 7 [220]
- The importance of infection during laryngectomy and contribution to the technique of this operation A PRACHTER *Acta oto-laryngol* 923, iv, 359 [221]

- Lethargic cocephalitis in Wisconsin W F LOMAX and W J BURKETT Wisconsin M J 9 3 xxx, 547
- Loophalitis lethargica and its secondary manifestations M NOYER An Fac de med Univ de Montevideo 9 2, 14, 139
- A case of postencephalitic adiposity E SUTTORIUS Polichin Rome 9 3 xxx, sec prat, 624
- Cerebral syphilis M H BAKER California Stat J M 9 3, xxx
- Internal hydrocephalus on the left side with the symptoms of cerebral tumor in the Rolandic zone J M OMBINO Rev Assoc med argent 9 3, xxx, 79
- Resection of the choroid plexus in unilateral severe hydrocephalus interna C LITVACHINSKY Arch f klin Chir 9 3 cxii, 74
- The surgical treatment of cerebral conditions causing intracranial pressure H A B LUT Canadian M A J 9 2, xxx, 3
- The administration of hypertonic salt solutions for the relief of intracranial pressure T FAY J Am M Am 9 3 lxx, 445
- Brain tumors in young children clinical and pathological study M WOLLESTEN and T H BURKETT Am J Dis Child 9 2, xxx, 57
- Cranial and intracranial endotheliomata W G PIERCE Surg Gynec & Obst 9 3 xxxv, 657
- Cerebral tumor BOWWILL B M J 9 3, 8
- A further report on cerebral tumors O D ALZORCO Polichin Rome 9 3 xxx sec med 207
- The meningiographic determination of the location of brain tumors A WOODS Hosp Tid 9 2, vi, 53
- Air injection in brain and spinal cord diagnosis W WUNDERL Deutsche Zeitsch f Nervenh 9 2, lxxv, 64
- The value of postmortem radiography (encephalography in brain diagnosis M DRAK Mtr d Ginnings d Med Chir 9 3 xxxv, 9
- A method for the localization of brain tumors in comatose patients the determination of communication between the cerebral ventricles and the estimation of their position and size without the injection of air (extracranial estimation) W E D COOT Surg Gynec & Obst 9 3 xxx, 64
- A tumor of the left second temporal convolution without speech disturbance cured by operation C J ALLEN Neph med 9 3 lxx, 501
- A cerebellopontine angle tumor first involving the fifth nerve D C WILSON Chilton Med Bull 9 3 ix, 4
- A technique for localization signs resulting from increased intracranial pressure M HUNTER J Med Ass Georgia 9 3, xii, 84
- Anteabdominal for cerebellar operations some points in the technique T W HUNTER Med Press, 9 2, cxv, 377
- Further notes on cortical epilepsy excited upon damaged cortex by peripheral trauma G ROSEKRON Practitioner 9 3 ix, 351
- Investigations of the chemical composition of the blood in epilepsy G PIZZALI Riforma med 9 3, xxxv, 435
- Epileptiform and epilepsy H LEWIS and C F NEVIN Med Clin N Am 9 3, vi, 4
- The pathology of the hypophysis A SCHULT Arch de med chir special 9 3 ix, 34
- Gonorrhea of the hypophysis L COHN Arch f path Anat 9 2, cxii, 45
- A review of the development of the pituitary and parathyroid glands M DEWITT Internat J Orthodont Oral Surg & Radiography 9 3 ix, 341
- Trifacial neuritis and its treatment A W LAROC Northwest Med 9 3 xxx, 35
- Preservation of the facial nerve in the radical treatment of parotid tumors A W ADAMS and W O OTT Arch Surg 9 3, 4, 739
- Facial hypoplasia anastomosis J A CALDWELL Cincinnati M J 9 2, iv, 147
- An examination of the spinal accessory nerves from case of bilateral acquired spasmodic torticollis C M BRIDGES Bull Johns Hopkins Hosp Balt 9 3, xxxv, 5
- Serous meningitis in 5 year-old child W J MURPHY and V P STRUMPHACOR South M J 9 3, xxx, 348
- Streptococcal meningitis S G ARNEY Lancet, 9 3, cxv, 95
- An atypical form of cerebrospinal meningitis G R LAYTON Sudo med 9 3 lxx, 43
- Meningeal reactions in infancy secondary to infectious processes J M MACRIS Seminars med 9 2, xxx, 867
- A case of cuto suppurative meningitis A J COOPER M J Surgeon, 9 2, lx, 543
- Calcification and ossification of the meninges A L HALEY and F CHRISTOPHER Arch Surg 9 3, 1, 847
- The morbid anatomy and drainage of the meninges E D DAIS Med Press 9 3, cxv, 356
- A comparative study of the Wassermann reaction and the colloidal benzoin reaction in the cerebrospinal fluid A L PRINCE Clin Lab 9 3, 4, 43
- ### Spinal Cord and Its Coverings
- Unusual hypothermia following lesion of the cervical spine S D LEVINE Bull et mem Soc med d hôp de Par 9 2, xxxix, 43
- Acute myelitis after over exertion R FRICKELBERG Verh Sachvers-Zig 9 2, xiv, 70
- Syngomyelitis M L GRAY Texas Stat J M 9 3, xi
- Syngomyelitis and syphilis of the nervous system with the report of case of tabes with syngomyelitis and syphilis C UHLER Texas State J M 9 3, xii, 7
- The early symptoms and the diagnosis of tumors of the spinal cord with remarks on the surgical treatment C A LEBERSON Am J M Sc 9 3, cxv, 70
- Hematomyelia of the spinal cord M E BLAND J Am M Ass 9 3 lxxx, 145
- Glioma of the spinal cord R W HARRIS Med Clin N Am 9 3, 4, 409
- A case of exceptionally rapid recovery following the removal of spinal cord tumor J J KETKA Nebraska Stat M J 9 3, xi, 70
- ### Peripheral Nerves
- The differential diagnosis of neuritis and conditions simulating it G WILSON J Am M Ass 9 3 lxxx, 143
- Concomitant hypertrophy report of case with diffuse neurofibromatosis W C CAMERON Surg Gynec & Obst 9 2, xxxv, 690
- The end results of nerve suture after gunshot wounds of the War of 9 4 to 9 8 THAYERNE Med Klin 9 2, xix, 37
- The Stieff operation for spastic paral m C H HENNA Surg Gynec & Obst, 9 2, xxxv, 63
- Artificial nerve branches for the innervation of paralyzed muscles B STROUD Arch Surg 19 3, vi, 73
- Tumors and cloma of the jaw controlled by alcohol injection of the inferior maxillary nerves C LACOURT and E BERNARD Bull et mem Soc med d hôp de Par 9 3, xxxv, 28
- The techniques for and the results of radical pteryngotomy H FRICKELBERG Klin Wochenschr 9 2, ix, 535

Sympathetic Nerves

- The pathology and surgery of sympathetic nerves. B O PRISMAN Arch f Klin Chir 1913 cxx, 307
 The position of the umbilicus in segmental patterns of the abdomen. V OWE Acta med Scand. 9 3, 1910, 99
 Periaxillary sympathectomy. A W JELICHOVSKI Polska gaz lek 9 1, 830 [229]

- Periarterial sympathectomy in neurovascular disease. H HUBER Deutsche Zeitsch f Nervenz, 912, 1913, 9
 Periarterial sympathectomy in arteriovenous aneurysms. H MATTHEI Zentralbl f Chir 913, 1, 300 [229]
 A note on the treatment of chronic ulceration of the lower extremities. R K FORD Lancet, 913 cccv 15

SURGERY OF THE CHEST

Chest Wall and Breast

- Extrapleural thoracoplasty for pulmonary tuberculosis. W NITZER Ann Surg 9 3, 1913, 610
 Menstrual changes in the breast. A ROSENBERG Zentralbl f Gynaec 9 3, 11, 111
 The female mammary in relation to the pelvic organs. D HANSEN Am J Obst & Gynec 9 3, 376
 Cancer of the breast. C ROSE 1913 Brit Med J 9 3, 1, 747
 Cancer of the breast. L D BILKEL Ann J Chir Med 9 3, 222, 3 3
 The treatment of spontaneous mammary carcinoma in the mouse. W H WOLLOW J Cancer Research, 9 2, vii, 379
 The treatment of breast cancer. S F ALLEN and A S KILGUSSEY Massach J 9 3, 4, 39
 The development of breast surgery in the past twenty years. O ALLEN-CROFT Ann Wchschir 913, 4, 6
 Postoperative prophylactic treatment of carcinoma of the breast. C M KONIGS Arch f Klin Chir 9 3, cxxx 9

Trachea, Lungs, and Pleura

- Tracheal atrophy, its external reference to its arterial and venal distributions. G J HERTZ Surg Gynec & Obst 913, cxxx, 686
 An x-ray ball in the trachea. J J L. vs Brit M J 19 3, 4, 809
 An incarcerated intrabronchial foreign body simulating chronic bronchitis. J HALLIBURY Bull et mem Soc med d hop de Par 1913, 3, 1000, 4
 The bronchoscopic removal of foreign bodies from the air passages. H T VERNHOUT Tenn State J M 1913, xii, 35
 Intubation and tracheotomy for diphtheria in the civil hospital of Vence. E B LAY Reform med 1913, cxxx, 444
 Traumatic pneumothorax. F S CHILD J J Am M Ass 9 3, 1913, 45
 Hydatid cysts of the lungs and pleura. R HALLAN Surg Gynec & Obst 913, cxxx, 354 [230]
 The diagnosis of hydatid cyst of the upper lobe of the lung. B BLANCH Polichs Reue, 9 3, xii, see 791 657
 Actinomycosis of the lungs simulating tuberculosis. H BAKER N York M J & Med Rec 19 3, cxxx, 63
 Lung abscess. G J HELLER Minnesota Med 1913, vi, 670
 Pulmonary abscess. F T CLARK Boston M & S J 913, cxxxv, 366
 Lung abscess. E A GRAMER Surg Gynec & Obst 1913, cxxx, 719
 The etiology and clinical features of lung abscess. J HOBAN Boston M & S J 19 3, cxxxv, 377

- The physiology of pulmonary embolism as disclosed by the quantitative occlusion of the pulmonary artery. G F MAGGART and A M WALKER Arch Surg 1913 vi, 764
 Pulmonary embolism following the filling of the left Beck's lumbar plexus. A LEE Ben. Klin Chir 9 3, cxxxv, 35
 (Diagnosis of the lungs. H BRYNNE Boston M & S J 9 3, cxxxv, 344
 Preliminary pneumothorax in lung surgery. J ALICE Surg Gynec & Obst 9 3, cxxx, 107
 Pleural epilepsy. F LAFRET J de med de Bordeaux, 9 3, 261, 3 4
 Cytochemical studies of carcinomas pleural which disappeared under radiation therapy. L. ROY, JAC and TON ET Bull et mem Soc med d hop de Par 1913, 3, 1000, 16
 Empyema and abscess of the lung. F B MOWBR Carillon M Am J 19 3, xii, 330
 The treatment of bronchopneumonia. EAA Deutsche Zeitsch f Chir 9 3, cxxxv, 55
 The prevention and treatment of chronic empyema. C A HEDGECOCK South M & B 9 3, 1913, 20

Heart and Pericardium

- The fluoroscope in modern cardiology. L I BAKER N York State J M 913, xvii, 305
 Unusual cardiac and cerebral metastases in melanocarcinoma. C V WELLS J Cancer Research, 1913 vi, 33
 The surgical treatment of aneurysm pericardii. W B CORRY and P E BROWN Arch Int Med 9 3, cxxx, 300 [230]
 Spontaneous rupture of the heart. R L LEE Lancet, 19 3, cxxx, 913
 Spontaneous rupture of the heart in case of aortic endocarditis. T A CLAUSE J Am M Ass 19 3, cxxx, 51
 Therapeutic pericardiectomy. M CARTER Bull et mem Soc med d hop de Par 19 3, 3, 1000, 545
 The technique of puncture for pericardial effusion. K. VETTER Verhandl d deutsch Gesellschaft f inn Med 1913, 430

Esophagus and Mediastinum

- Enlarged thyroids—clinical findings in series of cases. J P PARKSON Med Clin N Am 1913, vi, 30 [231]
 The enlarged thyroid gland from the viewpoint of the laryngologist. L HUBERT N York M J & Med Rec, 1913, cxxx, 410 [231]
 Malignant tumors of the thyroid. H LANGENBERG Frankfurt Zeitsch f Path, 1913, cxxx, 36
 A specimen of congenital stricture of the esophagus. R HITCHCOCK Proc Roy Soc Med Lond 1913, xvi, Sect Du Child 45

- Cardioperiton with oesophageal diverticula P P VINCOR
N York M J & Med Rec 923, cxvii, 540
The early treatment of oesophageal erosions H SALKER
Wien klin Wchnsch 923, xxxvi, 205
The metastasizing tendency of oesophagus carcinoma
G F HENSLER Ann Surg 923, lxxvii, 27 [231]
Experimental surgery of the thoracic oesophagus R T
MILLER J and W D W ARNOLD Bull Johns Hopkins
Hosp Balt 923, xxxiv 99 [232]

Miscellaneous

- A case of multiple hamangiomas of the thorax
R SCHWENKE Schwenn med Wchnsch 923, lxx, 243
A clinical and roentgen ray study of tuberculous bron-
cho-adenopathy T FRASER and J D MACRAE J Am
M Ass 923 lxxx, 79
Subphrenic abscess G PIRAMO Pabdin 923, xxx,
xxx chur 74

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- A note on direct and indirect inguinal hernia on the same
side H GRIFFITHS Lancet, 923, cxv, 96
Hernia of the female internal genitalia through the
inguinal canal H W HENRI Am J Obst & Gynec
1923, 50
Tumors of the true pelvis and their relation to femoral
hernia I H BARNARD-KRUEGER Zentralbl f Chir 923, I,
560
The treatment of gangrenous femoral hernia A BECKER
Deutsche Ztschr f Chir 923 cxviii, 25
Transposition of the rectus abdominis in herniotomy W S
SCHLEY Ann Surg 923, lxxvii, 605
The technique of suture of the hernial opening in hernia
via broad base C MIA XX Zentralbl f Chir 923, I,
57
The radical operation for hernia in children E GONZ
SABAT Wien Wchnsch 923 640
Hemoperitoneum from ruptured corpus luteum A
STRAUSS J Am M Ass 923 lxxx, 287
Bile peritonitis without perforation H BURCKMANN
Beitr klin Chir 923, cxviii, 209
Tuberculous peritonitis C N DOWD Ann Surg 923,
lxxvii, 632
The treatment of tuberculosis of the peritoneum in
children H FRANKENBERG and F ROSE Samml schwed
Abhandl d Geb d Verdauung u Stoff eche Krenke
923, viii, [233]
The evolution of the modern treatment of septic peri-
tonitis H W CANNON Lancet 923, cxv, 35
A third omentum M I BERNAN and W M JONES
Surg Gynec & Obst 923, xxxvi, 708
An unusual tumor of the omentum (actinomycoma)
F MATZ Deutsche Ztschr f Chir 923, cxviii, 7 [234]
A case of hernia of the mesentery of Meckel diverticula
A SCHWENKE Zentralbl f Chir 923, I, 669
The diagnosis of carcinoma of the mesentery I SCHLES
Ovros helv 923, lxxvii, 5
The surgical pathology of the transverse mesocolon,
with particular consideration of fecal production E
HENSE Beitr klin Chir 923, cxviii, 26 [235]
Castration of the mesosigmoid A ILSHOFER
Polska gaz lek 923 n, 20 [236]

Gastro-Intestinal Tract

- Saliv in nutritive processes C JACOBSON Arch
Pediat 923, xl, 224
The question of gastric hormones R K S LEE
Quart J Exper Physiol 923, xxi, 79 [237]
An elaborated stomach muscle E BECKER Deutsche
Ztschr f Chir 923, I, cxviii, 234
Valvulae of the stomach in spontaneous recovery L
WISSE Fortschr d Geb d Roentgenstrahlen, 1923,
xxx, 213

- True diverticula of the stomach L ROHMERT Fort
schr d Geb d Roentgenstrahlen, 923, xxx, 203
The fractional test meal in the study of disorders of the
gastro-intestinal tract an analysis of 74 verified cases
D HERRICK Quart J Med 923, xvi, 95
The clinical evaluation of fractional gastric analyses J
POLAK Ohio State M J 923, xii, 337
The pure and the fractional Ewald meal by the Rehfu-
s method E CORVOCCI South M & S 923, lxxvii, 26
Symposium on indigestion, its varieties and treatment
C S LILIENTHAL, F O THOMSON, and F FRASER Lancet,
923, cxv, 902
Diagnosis in the chronic dyspepsias C S McVIGAN
Canadian Pract 923, xlviii, 37 [238]
So called gas in the stomach J W PALFREY Boston
M & S J 1923, cxviii, 800
Gastro-enteric colic abdominal exploration E P
SALT Semana med 923 lxxx, 90
Acute dilatation of the stomach T BERNARD and W
CAMPBELL Polska gaz lek 923, I, 264
Cardiospasm associated with ascariasis, ascariasis, and
ascariasis with report of twenty three cases J R. VAN
NORTON, J South M J 923, xvi, 238
Spasm at the cardiac and cardioperiton J FRIEDENFELD
and T H MONTGOMERY South M J 923, xvi, 34
Cardiospasm in the aged J H ZAATJE Ann Surg
923 lxxvii, 65
The diagnostic value of the atropine test in pyloric con-
dusions E OTTOMER Roentgenologie, 923, I, 6 [239]
Pylorospasm F J KOPPELSON N Orleans M & S J
923, lxxvii, 22
The surgery of pylorospasm in nursing infants B
HILL Zentralbl f Chir 923, I, 6 [240]
The diagnosis and treatment of pyloric stenosis W P
LUCAS Med Clin N Am 1923, vi, 1393
Atropine in the treatment of congenital pyloric stenosis
M H BASS Med Clin N Am 923, vi, 579 [241]
Three cases of aphasia of the stomach K ALLENBERGER
Ann ital di chir 923, n,
The pathogenic theory of gastric ulcer P I STRAUSS
Newy Chir Arch 923, n, 128
A statistical inquiry into the efficiency of present-day
methods of diagnosis of ulcers of the stomach and duo-
denum, and into the value of gastric pyrolysis in their treat-
ment A YOUNG, A J HUTTON and J S BUCHANAN
Lancet, 923, cxv, 681
The diagnosis of peptic ulcer and its bearings on treat-
ment T CAMPBELL Bristol M Chir J 923, xl, 71,
[242]
The reliability of the X ray diagnosis of gastric ulcer and
gastric carcinoma (statistical) KOPPELSON Fortschr d
Geb d Roentgenstrahlen, 923, xxx, 4
The pyloric and prepyloric to ulcer W KOPPEL-
SON Zentralbl f Chir 923, I, [243]
Ulcer of the stomach and duodenum E S JONES Min-
nesota Med 1923, vi, 21

- Partial obstruction of the duodenojejunal junction as cause of ulcer of the duodenum E P SLOAN J Am M Ass 9 3, 1922, 977
- The operative treatment of non perforated duodenal ulcer B K FINKELSTEIN Nw York Arch 9 3, 1922, 583
- A case of carcinomatous ulcer of the duodenum L DROGOTZ Arch f Verdauungskr 9 3, 1922, 306 [242]
- Duodenectomy report of an experiment four years after the operation F C MANN and K. KAWAMURA J Lab & Clin Med 9 3, 1922, 523 [243]
- A lesion of the first portion of the jejunum G BARONIA Polakia Roma 9 3, 1922, 222
- Perforated Meckel diverticulum D B PRETZER Ann Surg 9 3, 1922, 6
- Acute ulcerated ileoceitis E L BENJAMIN N York State J M 9 3, 1922, 205
- Primary intestinal phlegmon A BRUN Bertr Klin Chir 9 3, 1922, 142 [242]
- Intussusception with report of four cases L D LAURIE and F E KELLER Therap Gaz 9 3, 1922, 35
- Intussusception in an adult due to an adenoma in the ileum C N DOWD Ann Surg 9 3, 1922, 633
- Three cases of intestinal intussusception in children, one of each as treated by pneumocystostomy DRACUPAR, TIEBELL et al Bull et mém Soc de chir de Par 9 3, 1922, 609
- Spontaneous reduction of an intussusception A FULLERTON Practitioner 9 3, 1922, 35
- A case of intussusception starting in large Meckel diverticulum N L HOOD Lancet 9 3, 1922, 904
- Intussusception supervening on congenital stenosis of the ileum W T WARWICK Brit M J 9 3, 1922, 804
- Ileocecal intussusception of caecal tumor with glandular metastases M VEAUTHEAU Bull et mém Soc de chir de Par 9 3, 1922, 635
- The surgery of constipation A MAILLON An Fac de med Univ de Montevideo 9 3, 1922, 585
- Surgical possibilities in traumatic rupture of the intestines A L LOCK Canad Med Assoc J 9 3, 1922, 5
- Intestinal rupture from external trauma without extra abdominal evidence report of six cases C A VINTH South M J 9 3, 1922, 350
- Megacolon A A MATTHEWS Northwest Med 9 3, 1922, 35 [242]
- Congenital idiopathic dilatation of the colon D FORT and L PLATTNER Arch Radiol & Electrotherap 9 3, 1922, 1 [242]
- Interspersion of the colon A ZETTLER Mechanik J 9 3, 1922, 570
- Congenital reduplication of the deeper portion of the intestine J GLAZIER Polakia gaz lek 9 3, 1922, 669
- Enterocolitis W W BOARDMAN Am J Roentgenol 9 3, 1922, 350
- Ulcerative colitis H ROLLINGTON Lancet 9 3, 1922, 930
- Acute pseudo-dysenteric colitis postoperative gastrointestinal hemorrhage, and ulcer formation R GORDONSON Mitt d Grenzgeb d Med Chir 9 3, 1922, 51
- Hemorrhage from the large bowel caused by an adherent appendix epiploica R E SMITH Brit M J 9 3, 1922, 853
- The technique and results of extirpation of tumors of the large intestine L Le NOUVEUR Bruxelles med 9 3, 1922, 677
- Röntgenological signs of cancer of the colon R D CARMA J Radiol 9 3, 1922, 147 [242]
- Shifting tumor of the cecum and appendix in children V C D VITO Ann Surg 9 3, 1922, 431
- The appendix as an endocrine gland A PERERA Arch de med exp 9 3, 1922, 300
- Pseudo-appendicitis and idiopathic serous peritonitis H KUMMEL Therap d Gegenwart 9 3, 1922, 177
- A study of diverticular formation in the appendix A P SYDNEY Arch Surg 9 3, 1922, 793
- The appendix and its rôle as masquerader H FOWLER Med Times 9 3, 1922, 57 [244]
- Appendicitis in children 4 years of age and under A SENNO Am J Surg 9 3, 1922, 97 [245]
- The early diagnosis of appendicitis R ROYCE Præmed. Par 9 3, 1922, 409
- The X ray examination of the appendix A HIRAZZI MA Roentgenologia 9 3, 1922, 9
- The clinical importance of the chronic changes in the appendix such as discovered by the roentgen ray F W WHITE Boston M & S J 9 3, 1922, 587
- Nerve disturbances in the abdominal wall in appendicitis B SCHENKEL Polakia gaz lek 9 3, 1922, 86
- The etiology of traumatic appendicitis N A LEBENCOV J Am M Ass 9 3, 1922, 448
- Bilateral appendicitis C H BAILEY and E A B LARD Surg Gynec & Obst 9 3, 1922, 704
- The pathology in cases of appendicitis with diarrhea J G SHEDDEN and F P HELLER J Masson Stat M Ass 9 3, 1922, 7
- Acute gangrenous or perforative and suppurative retrocecal appendicitis J N JACKSON South M J 9 3, 1922, 8
- The roentgen diagnosis of so called chronic appendicitis F EISENICH Deutsche med Wochenschr 9 3, 1922, 440
- Chronic appendicitis C L AYER U S Naval M Bull 9 3, 1922, 580
- Chronic appendicitis A NA ARBO An Fac de med Univ de Montevideo 9 3, 1922, 68
- A case of chronic appendicitis simulating angina pectoris A BASTIEN J Am M Ass 9 3, 1922, 1454
- Chronic appendicitis and appendectomy E ROUFFART Gynec et obst 9 3, 1922, 5
- Operations for appendicitis and their complications (statistical) G W ALDREY Nw York Arch 9 3, 1922, 397
- On septicæmic infection following operations for appendicitis prophylactic serum H H BROWN Brit M J 9 3, 1922, 89
- Abnormalities of fixation of the ascending colon the relation of the symptoms to the anatomical findings A A MCCONNELL and T G HARDMAN Brit J Surg 9 3, 1922, 532 [245]
- A case of peritonitis verified by radiography S I DE LOVO and AROMACHO Bull et mém Soc med d hôp de Par 9 3, 1922, 43
- Perforation of the sigmoid colon by scybala K S KETTER and H S ALTMAN N York Stat J M 9 3, 1922, 9
- Operations for the closure of an artificial anus F J KAMMER Zentralbl f Chir 9 3, 1922, 666
- The rectum in its relation to digestive disorders B ARMAN Kentucky M J 9 3, 1922, 222
- Diseases of the rectum and sigmoid H STRAUSS Bertr Urban & Schwarzenberg 9 3, 1922, 932
- Circumscribed proctitis of traumatic origin W A ROGER Boston M & S J 9 3, 1922, 735
- Schistosoma matani proctitis E L ELIASON Ann Surg 9 3, 1922, 675
- A case of diffuse carcinomatous hematomas of the rectum HERRICK and ROBERTS Mitt d Grenzgeb d Med Chir 9 3, 1922, 35
- Hemorrhoids R HOOD N York State J M 1922, 222
- Syphilitic structure of the rectum W R RABERY Ill-nova M J 1922, 320, 370

- The surgical relief of non-malignant strictures of the rectum. C J DIXON. Chicago M Rec. 1913 xlv 667.
- The treatment by radiation of cancer of the rectum. H H BOWEN and F W ARNOLD. Ann J Roentgenol 1913, x, 290.
- The technique of resection of the rectum. H BRUN. Zentralbl f Chir. 1913, l, 90.
- Resection of the rectum with restoration of the anal outlet. C W ALLY. N Orleans M & S J. 9, 3, 1913 603.
- Abnormal closure of the anus by isolated bloody dissection of the spine. H K. LA. Beitr. Klin. Chir. 1913, cxviii, 441.
- New symptoms of anal fissure. J. SVENSS. Monatschr. f. Kinderh. 9, 3, 1913 706.
- The technique of stool examination. M C CARRIN. Med Clin N Am. 1913, vi, 1567.

Liver Gall Bladder Pancreas, and Spleen

- The movable liver and its successful treatment—new method of operation based on the principle of supporting the liver from below and plastic procedure on the abdominal wall with doubling of the splanchnics. F J KATZ. Deutsche Zeitschr. f. Chir. 9, 3, 1913 4.
- Studies on the total bile. III. On the bile changes caused by pressure obstacle to secretion and on hydroperosis. P D M MAYER, G O BROWN and P ROSS. J Exper. Med. 1913, xxxv, 685.
- Studies on the total bile. IV. The enterogastric curvatures of bile pigment. G O BROWN, P D M MAYER, and P ROSS. J Exper. Med. 19, 3, 1913, 699.
- The pathology of human bile secretion and report on polydactyl. Gervais. Beitr. Klin. Chir. 9, 3, 1913, 21.
- Observations on the value of phenolstrichlorophthalate in estimating liver function. G M PRINCE and H L BOCKUS. Arch Int Med. 1913, xiii, 613.
- The results of ligating the hepatic artery—observations on the functional examination of the liver. A RUTTER. Mitt. d. Chirurg. d. Med. Chir. 1913, cxv, 70.
- Hepatitis, cholelithiasis, hydrops of the gall bladder. C G HYDE. Surg. Clin N Am. 1913, vi, 173. (1914)
- The treatment of liver abscess by aspiration. P BLANSON, RABO, G C LOW, J J PATT and A L GIBSON. Lancet, 9, 3, 1913 94.
- The surgery of gonorrhea of the liver. B MONAG. Beitr. Klin. Chir. 1913, cxviii, 48.
- Actinomyces of the liver. G C SERRAVALLO. Orvosi Hetil. 9, 3, 1913, 63.
- Non-obstructive jaundice. R J M BLACKMAN. Lancet 1913, cxv, 900.
- Acute catarrhal jaundice. H C MACKIE. Mid. burgom. 1913, lx, 300.
- Amphlemmas jaundice simulating biliary duct obstruction. G P MILLER. Surg. Clin N Am. 1913, vi, 173. (1914)
- Two cases of alcoholic jaundice. R HUTCHINSON. Proc. Roy. Soc. Med. Lond. 1913, xvi, Sect. Dis. Child.
- A case of alcoholic jaundice. D F TAYLOR. Proc. Roy. Soc. Med. Lond. 1913, xvi, Sect. Dis. Child.
- The possible application of the phenolstrichlorophthalate test to obstructive jaundice. R ORRINGER and S ROBIN. J Am M Ass. 1913, lxxx, 59.
- The function of the gall bladder. G M CHASE. J Iowa Stat. M Soc. 1913, xii, 304.
- Difficulties in the diagnosis of right upper quadrant disease with particular reference to the gall bladder. C F KAHN. J Michigan State M Soc. 19, 3, 1913, 32.
- The pathologic gall bladder. A W GEORGE. Lancet, 1913, cxv, 688.

- Gall bladder disease in childhood. E L KILLGROO. Am. Surg. 1913, lxxvii, 377.
- A study of the bile obtained by non-surgical biliary drainage, with especial reference to its bacteriology. G M PRINCE and H L BOCKUS. Am J M Sc. 1913, cxv, 446. (1917)
- Experiences with non-surgical biliary drainage (Mikro-Lyon test). E HOLLAYNER. Am J M Sc. 1913, cxv, 477. (1917)
- The diagnosis and treatment of gall bladder disease. J S McCLINTOCK. Texas Stat. J. M. 19, 3, 1913, 34.
- Vocalism of the bile in biliary lithiasis and its significance. F A GALLINO. Seman. med. 1913, xiii, 804.
- The diagnosis of gall stones. W F CHERRY. Med. Clin. N Am. 9, 3, vi, 1371.
- Melasma with gall stones. V. WILK. Casop. lek. dok. 1913, lxx, 30. (1917)
- A fatal hemorrhage from an eroded arterial cystic of the gall bladder. R H JAFFE. J Am M Ass. 1913, lxxx, 361.
- The surgical diagnosis and treatment of gall stone disease. N I ROSENBERG. N. Y. Chir. Arch. 1913, vi, 351.
- Duodenal drainage and the surgery of the gall bladder. A T PETERMAN and A W GALLOW. South M & S. 19, 3, 1913, 240.
- The advantages and disadvantages of the open and closed method of gall bladder extirpation. A H FLORIAN. Arch. f. Klin. Chir. 1913, cxviii, 3.
- Indications for the removal of the gall bladder. W L CHERRYMAN. Texas State J. M. 1913, xii, 27.
- Primary closure of the abdominal wall in gall-stone operations. E HILLER. Klin. Wchnsch. 1913, vi, 63.
- A new test for pancreatic efficiency and its use in the diagnosis of gall bladder disease and certain obscure dyspepsias. F L JEFFREY and G CANNON. Med. J. Australia, 1913, 4, 1.
- The etiology of acute pancreatitis. W G WOOD. Edinb. M. J. 1913, xii, 20.
- The differential diagnosis of diseases of the pancreas. O E HOLTHOFFER. Atlantic M. J. 1913, xvi, 313.
- Pancreatic lithiasis. M. BERNHARDT. Fortsch. d. Geb. d. Roentgenstrahlen, 1913, xii, 81.
- The differential diagnosis of pancreatolithiasis. J L A. PIERRE. Deutsche med. Wchnsch. 1913, xlii, 170.
- The changes in the blood picture following splenectomy—results of the beginning disturbance of internal secretion. E L BERGMANN. Klinische Wchnsch. 1913, vi, 3. (1917)
- Experimental research upon the importance of the spleen in the production of agglutinins. A. STOKER. Spemann. Zeitschr. 1913, lxxv, 36.
- Chronic functional splenomegaly of Gaucher's type. HARVEY and LINTZ. Bull. et Mem. Soc. med. d. hop. de Par. 1913, 35, 1913, 87.
- Alphal splenomegaly and its complications. O. COVATZ. Polich. Roche, 1913, xvi, 200, 201.
- Idiopathic hyperplasia of the splenic follicles. L. FREUD. Zentralbl. f. Chir. 1913, l, 135.
- Observations on the surgery of the spleen. H. BRUN. Beitr. Klin. Chir. 1913, cxviii, 344.
- The effect of splenectomy on the hemopoietic system of melanoma-bearing. E B. KUTSCHER and J. H. MORGAN. J. Arch. Int. Med. 1913, xiii, 666.

Miscellaneous

- Pancreatic abscesses arising from the duodenum. T G COLE. J Am M Ass. 1913, lxxx, 1434.
- Diaphragmatic hernia. A T MANN. Minnesota Med. 9, 3, vi, 345.
- Diaphragmatic hernia. L. REICH. Fortsch. d. Geb. d. Roentgenstrahlen, 1913, xii, 305.

- The discharge of chyle into the abdominal cavity G
GOLM *Zentralbl f Chir* 9 3, 1, 800
The differential diagnosis of abdominal diseases D
KOLLEKAROFF *Deutsche med Wchnsch* 923, xix, 274.
249
Subphrenic abscess M BATHMAN *Beur klin Chir*
923, cxxviii, 477
Subdiaphragmatic abscess W A DODDLE *Haboe*
mas Month 923, lxvii, 206
Inflammatory diseases of the right upper abdomen H
KLOM *Therap d Gegenw* 923, lxxxv, 48
Subhepatic peritonitis G CASTRONOVA *Riforma*
med 9 3, xxix, 445
The cecum versus the appendix in right-sided abdominal
lesions BAKER *Ann Surg* 923, lxxvii, 638
The cause and nature of varicella F M POTTINGER
Chicago M Rec 9 3, xl, 652

- The surgical abdomen O W SHEPARD, U S. Naval
M Bull 9 3, xviii, 569
Drainage in intra-abdominal infection A C WILDERKY
Ann Surg 9 3, lxxvii, 558
Drains and drainage of the abdominal cavity M L
CUTNER *J Indiana Stat M Ass* 9 3, xvi, 73
The use of glass tube drainage in the abdominal wall
F KROCH *Zentralbl f Chir* 9 3, 1, 639
The significance of diarrhea following abdominal oper-
ations E BEER *Ann Surg* 923, lxxvii, 534
The after-treatment of abdominal operations M
ECCLIS *Lancet*, 9 3, ccc, 559
Treatment after abdominal operations M ECCLIS
Brit M J 9 3, 1, 899
A pillow placed at the foot of the bed after abdominal
operations T S COLLIER *J Am M Ass* 19 3, lxxx
5

GYNECOLOGY

Uterus

- Inversion of the uterus treated by hysterectomy J J
W F W *Brit M J* 9 3, 4, 854
Amesemboma: its significance and treatment M K
KROHN *Texas Stat J M* 9 3, xxx, 30
Dysmenorrhea J I ROTHEBERG *Minnesota Med*
923, 434
Metrorrhagia in diabetes A N ARBO *An Fac de*
med Univ de Montevideo, 9 3, viii, 7
A critical review of series of incisional cases operated on
for removal of focus of infection in the cervix uteri W
LANOWITZKY *J Am Med* 9 3, xlix, 73
Red degeneration of fibroids J M MCKEY *Am J*
Obst & Gynec 9 3, 59
The evolution of the operation for myoma of the uterus
D VON OTT *Am J Obst & Gynec* 9 3, 475
Inoperable carcinoma of the cervix, report of three
cases in which radiotherapy arrested the disease S D
NEZ *J Oklahoma State M Ass* 9 3, xvi, 5
The technique of the treatment of carcinomas of the
cervix uteri: its combination of X rays and radium
rays H SCHWARTZ *Am J Roentgenol* 9 3, x, 9
[249]
Sarcoma of the uterus J C MASON *Am J Obst &*
Gynec 9 3, 245 [249]
Sarcoma of the uterus: its report of thirty cases M
F VOCT *Am J Obst & Gynec* 9 3, 53

Adnexal and Perit Uterine Conditions

- Cysts in the fallopian tube during the ovulation cycle
and early pregnancy F F SYNDER *Bull Johns Hopkins*
Hosp Bull 923, xxvii
Primary carcinoma of the fallopian tube C W L
RENO *Minnesota Month* 9 3, lvi, 294 [250]
Transplantation of human ovaries: present status and
future possibilities W S DARNSTADT *Am J Obst &*
Gynec 9 3, 493
A cyst of the ovary with twisted pedicle, acute intes-
tinal obstruction A J P RIVEROY *Bol de la Soc de*
obst gynec de Buenos Aires, 19 3, ii, 35
Detachment of dermoid-cyst of the ovary by sponta-
neous rupture of its pedicle L FROST *Vir Brusseles-*
med, 9 3, vi, 645
A case of paratyphoid beta lactulin infection of an ova-
rian cyst J A CORCORAN *Am J Obst & Gynec* 9 3,
545

- Reciprocal relations between appendicitis in the female
and inflammation of the right adnexa C G COMSTON
Rev franc de gynec et d obst 923, xviii, 77 [250]
Tumors of the round ligament: report of case L V
SAUND *Colorado Med* 9 3, xx, 35
Pelvic abscesses G COTTE and D JERDETCH *Gynec*
et obst 923, x, 205 [251]

External Genitalia

- Incomplete or absent vagina: reconstructive operations
A LAMAS *An Fac de med Univ de Montevideo*, 9 3,
viii
Four cases of congenital defect of the vagina, with re-
construction from the small intestine N MORROWSKI
Zentralbl f Chir 9 3, 1, 59
The operative treatment of vesicovaginal fistula J
HALES *Zentralbl f Gynaek* 9 3, xlvii, 588

Miscellaneous

- Ductless gland therapy: the corpus luteum J L
MASTERMAN *Wood Practitioner* 9 3, cx, 387
The vaginal pessary: its indications and limitations E
VOYAK *J Am M Ass*, 923, lxxx, 294
Pelvic inflammatory disease A F MAXWELL *Surg*
Chn N Am 9 3, ix, 845
Chronic urinary disturbances in women A NELKEN, N
ORLANS M & S J, 9 3, lxxxv, 716
Vesico uterine obtrusional fistula F DELANVOY *Bull*
et ann Soc de chir de Par 9 3, xlix, 699
The measurement of the female urinary bladder after
operation and during pregnancy: further study of reval-
uation of its bearing on urinary tract disturbances A H
CUTNER *J Am M Ass* 9 3, lxxx, 20 [251]
Focal infection as applied to gynecological practice F
L BAX *Tex Stat J M* 923, xlii, 38
Tuberculosis of the female reproductive organs E E
FANGETT *J Indiana Stat M Ass*, 923, xvi, 157
The treatment of gonorrhea in women J A Mc
CLINT *Therap Gaz* 9 3, xi, xliii, 279 [252]
Adenocarcinoma of the female pelvic organs A DONALD
Med Press, 9 3, x, cxi, 205
An unusual type of carcinoma in women 29 years of
age A STEEL *Am J Obst & Gynec* 923, v
539
New applications of radiotherapy in gynecology D S
REICHSBERG *Med Ther*, 923, vi, 457

The results of radium in gynecology A F MAXWELL
California State J M 923, xii, 55 [252]
Methyl chloride peroxide in gynecology and obstetrics
P SCHWACHNER Klin Wchnschr 923 ii, 596

Local anesthesia in operative gynecology R ZIMMER
MAYN Ztschr f Geburtsh Gynaek 1923, lxxv, 301
Some gynecological operations in relation to his own
work A E GILES Lancet, 973 cxxv 231

OBSTETRICS

Pregnancy and Its Complications

Prenatal care and treatment R P KELLY Virginia M
Month 923, li, 82
The general arrangement of pregnancy and labor M C
HICKEY J Michigan State M Soc 1922, xiii, 247
Pregnancy and labor in cry young and elderly primip-
ara P F WILLIAMS Atlantic M J 93, xxvi, 456
The early diagnosis of pregnancy by the method of De
der Rood STREILERS Lapsid med 923, xvi, 5
The general and diagnostic value of cutaneous mani-
festations pregnancy P SE XODI Rev ital di ginec
93, 4, 335
Complications of pregnancy C F HUBBARD J Michigan
State M Soc 93 xiii, 244
Spontaneous rupture of the uterus C M ROUSTON
Brit M J 93 i, 855
Renal infections in pregnancy S R WOODS Jr J
Med Soc N Jersey 93, xx, 55
Pyelitis in pregnancy F H KLOW South M J
93, xiv, 369
Glycosuria and bacteriuria in pregnancy S F DEXER
Bol de la Soc de obst y ginec de Buenos Aires 93 ii, 30
The treatment of the toxemia of pregnancy W A
FORREST Med Herald, 93, xix, 30
Hypertensive gravidarum D F CROWLEY J Iowa
State M Soc 193 xix, 95
A routine treatment for hypertensive gra idarum J
STRAUSS Am J Obst & Gynec, 923, 48 [254]
Adrenaline and the vomiting of pregnancy N BLANCO
Arch de med. chir y especial 923 xi, an de la Soc
ginec espal 49
Report of case of retinitis gra idarum with no other
indications of toxemia J K QUINCY Am J Obst &
Gynec 93, v, 530
Personal experiences in the operative treatment of
eclampsia M A STICK J Lancet, 93 xlii, 58
My improved method of the prophylactic treatment of
eclampsia STALLS VON J Obst & Gynec Brit Emp
923, xix, [254]
Gonococcus arthritis in pregnancy G D ROYCE
Am J Obst & Gynec 923 51
Nephroblastoma and pregnancy A P HERNANDEZ Chi-
cago M Rec 93, xiv, 67
Fibromatosis complicated by pregnancy BRIDGES
Prace med Par 923 xxvi, 28 [255]
Extra uterine pregnancy P BOTELLA MONTON Arch
de med. chir y especial 93 xi an de la Soc ginec
espal 6
A case of extra uterine pregnancy BOUVERES Arch de
med. chir y especial 193 xi an de la Soc ginec
espal 56
A clinical study of ectopic pregnancy L BRADY Bull
Johes Hopkins Hosp Bull 931 xxxv, 5 [255]
The diagnosis of tubal pregnancy cesarean pregnancy
E DOWD and R ROCHER Gynec et obst 93 vi
216
Tubal pregnancy W E DALL Am J Obst &
Gynec 923, 537
A case of erosion of the rectum by ectopic placenta
J A C PONSIVINE Lancet 923 cxxv 795 [256]

Labor and Its Complications

Premature labor with dystocia in double uterus,
modified Porto operation A A BORDO Bol de la Soc de
obst y ginec de Buenos Aires 193, li, 5
The use of the Champetier de Ribes bag in the obstetrical
clinic of the Rivadavia Hospital J E BAZA Bol de la
Soc de obst y ginec de Buenos Aires, 193 ii, 3
An answer to comment on the Voorhes bag E I. CORRELL
Surg Gynec & Obst, 93, xxvii, 78
A critical review of fifty three cases of rupture of the
uterus following the use of hypophyseal preparations L
PORTLOR and J T CHASE Rev franc de gynec et obst
93 xix, 45 [256]
A discussion of the factors influencing breech, cephalic
and transverse presentation I DYOUN Latent J
Gyn 923 xxvii, 305
Difficult labor J O FORD Am J Gynec & Obst 193
453
The forceps F LA TORRE Clin med 93 xiv 82
A case of fatal shock secondary to parturition J
VIVIAN Med Libera, 93 ii, 4
The treatment of adherent placenta—a symposium F
P D and J C LODGE, J W WILLIAMS, B C HIRST, and
others Therap Gaz 93, xi xxxix, 305
Intropension of cesarean section R DE FORESTA Ri-
vital di ginec 93, 4, 369

Puerperium and Its Complications

Colloid argentine in ruptured puerperium D M B
SMALL Brit M J 93 i, 609
A further report on the aspiration and pressure treat-
ment of puerperal pulmonary abscesses J P GARRISON
Ohio State M J 93 xix, 116
Uterine subinvolution due to bacteria F VILL VON
Sofia med 923 lxx, 145
Mechanical signs during the puerperium W MOLLER
Monatschr f Geburtsh Gynaek 1922, lxx, 273 [257]
Report of two cases of obstetrical sepsis G L BROAD-
HEAD Am J Obst & Gynec 923, 548
The treatment of puerperal infections with dicaine B
P W MOY Brit M J 923 i, 305 51
The use of continuous drip irrigation in puerperal fever
A WAGNER Deutsche med Wchnschr 93 xlviii, 577
[258]
Puerperal infection ligature or excision of umb A J
VILLIERS Med J Australia, 923 499 [259]
The treatment of puerperal infections B P WATSON
Lithburgh M J 923 xxx Sect Edinb Obst Soc 68
On the surgical treatment of certain puerperal infec-
tions J F BALDWIN Am J Obst & Gynec 923, 566
[258]
The after-care of obstetrical patients C J AVERY
Virginia M Month 93 li,

Newborn

A note regarding new use of oxygen therapy O S
DA MOUN Lithburgh M J 923 xxx T Edinb
Obst Soc 65

- The effects of irradiation on fetal development H
BAILEY and H J BAGO *Am J Obst & Gynec* 9 3
[259]
45 Bleeding and coagulation in the first week of life D H
SARGENT and H R LINDERS *N York Stat J M* 9 3
[260]
The hemorrhages of the newborn J N CROOKER *N
Lancet*, 9 3, col. 836
Blood transfusion by the citrate method in hemorrhages
of the newborn F H FALLS *J Am M Ass* 9 3
[260]
676

- Postmortem findings in the newborn H C M DOWELL
N York Stat J M 9 3, xxiii, 43 [260]

Miscellaneous

- Obstetrics collected specimens and art G T MYERS
Vermon M Month 9 3, li, 86
The abuse of ergot in obstetrical and gynecological prac-
tice with special reference to its present position in the
British pharmacopoeia H H DALY *Proc Roy Soc Med*;
Lond 9 3, xvi, Sect Obst & Gy rec [261]

GENITO-URINARY SURGERY

Adrenal Kidney and Ureter

- A case of adrenal hemorrhage J MACN URE and H
MANNETT *Bull et mém Soc méd d hôp de Par* 9 3
[259]
A case of acute bilateral suprarenal hemorrhage A G
M SEVER *Lancet*, 9 3, col. 836 [262]
Suprarenal embolism A P GALT *Arch de med cirug*
[special] 9 3, xi, 205
Adrenal insufficiency F STANLEY *Presse med Par*
9 3, xxxi, 430
Nephropathy its causation, symptoms, and radical
cure J J BELL *Brit M J* 9 3, 889
Anomalies of the kidney and their clinical significance
I PROSSER *Medica Falk* 9 3
Double kidney D N ESTERON *N Ann Surg* 9 3
[259]
Absent right kidney deformity of the left ureter W G
BALL *Proc Roy Soc Med Lond* 9 3, xi, Sect Urol
[26]
The production of kidney lesions in rats by diets defect
in only is that they contained excessive amounts of pro-
tein L M POTTER *Bull Johns Hopkins Hosp* *Bull*
9 3, xxxv, 68
Renal efficiency tests M G SUTTON *Med J Australia*,
9 3, 374
The technique of the determination of renal function G
DELA *Polichin Roue* 9 3, xxxi, sec. med. 56
Remarks on pyelography J THOMSON WALKER *Arch
Radiol & Electrotherap* 9 3, xxvii, 334 [262]
Pyelography common diagnostic errors M B WIL-
SON *California State J M* 9 3, xxi, 91
The importance of pyelography in recognizing the causes
of obscure abdominal symptoms R F O'NEIL *Boston
M & S J* 9 3, cxxviii, 67 [263]
Our experience with pneumocystography of the kidney
A MONTMAYE *Zschr f urol Chir* 19 3, xii, 303
The silent kidney J D BARREY *Boston M & S J*
9 3, cxxviii, 665
The formation of cysts of the kidney E HALLANDER
Zschr f urol Chir 19 3, xii, 30
Serous cyst of the kidney E M WALKER *Proc Roy
Soc Med Lond* 9 3, xvi, Sect Urol 45
Multicystic cystic formation in the lower pole of the kidney
R H J SWAN *Proc Roy Soc Med Lond* 9 3, xvi,
Sect Urol 41
Hydrocephalus due to abnormal blood vessels R
BUTTER and L BURN *Bull et mém Soc de chir de Par*
9 3, xix, 616
Hydrocephalus caused by abnormal blood vessels P
BURN *Bull et mém Soc de chir de Par* 9 3, xix, 303
Hydrocephalus from developmental anomalies and con-
striction of the ureter W TIVEDER *Zschr f urol
Chir* 9 3, xii, 30

- Experimental hydrocephalus the failure of chorion to
affect its rate of development F THOMAS and A E BELL
J Urol 9 3, ix, 397
Partial pyelonephritis in kidney with the ureters
CUTLER and J VERNON *J d urol med et chir* 9 3,
xii, 37
Suppurative pyelitis nephrectomy cure V C PRATER
Med Times, 9 3, li, 3
Pyelonephrosis due to the kinking of the ureter by ab-
normal renal vessels R H J SWAN *Proc Roy Soc Med
Lond* 9 3, xvi, Sect Urol 41
Streptococcal nephritis in an infant secondary to ery-
sipelas of scrotal organ cured by arsenic therapy and
blood transfusion P FRYMAN and J P LAMARE *Bruxelles
med* 9 3, li, 664
A case of chronic parenchymatous nephritis treated by
decompression of the kidney J H SMITH and J M
WATSON *J Roy Army Med Corps Lond* 9 3, xl, 96
A possible mistake in the diagnosis of gonococcal infec-
tion of the kidney in the report of suspected case C
H DE T. SERRIN *J Am M Ass* 9 3, lxxx, 359
On the passage of the staphylococcus aureus through the
kidney of the rabbit S C DYCK *J Pathol & Bacteriol*
9 3, xxxv, 64 [263]
The technique of enlarged pyelotomy for renal calculi
D N ESTERON *surg Gynec & Obst* 9 3, xxxvi,
75
A large renal calculus R O WARD *Proc Roy Soc
Med Lond* 9 3, xvi, Sect Urol 39
Renal function following nephrotomy J A H Mc-
GOWAN, JR *Surg, Gynec & Obst* 9 3, xxxvi, 675 [264]
A specimen showing transitional cell growth of the
kidney W G BALL *Proc Roy Soc Med Lond* 9 3,
xvi, Sect Urol, 35
Specimens of new growth of the pelvis and kidney J
McALPINE *Proc Roy Soc Med Lond* 9 3, xvi, Sect
Urol 37
Necrosis of the kidney following ligation of abnormal
renal vessels W G BALL *Proc Roy Soc Med Lond*
9 3, xvi, Sect Urol 34
Hydronephrosis following nephrectomy for tuberculosis W
MYERS *Ann Surg* 9 3, lxxvii, 670
Reduplication of the ureter J I GRUNINGER *Ann
Surg* 9 3, lxxvii, 563
Ureterocoele S J FIDELL *Nouv Chir Arch* 9 2,
ii, 426
Ankles of the ureter due to aberrant vessels A H CROSS-
MAN *Boston M & S J* 9 3, cxxviii, 676 [264]
Knotting of the ureter H MICHAEL *Zentralbl f
Gynack* 9 3, xlvii, 59
Block in the ureter H L KREIBER *J Am M Ass*
9 3, lxxx, 435
The diagnosis and treatment of renal calculi G J
THOMAS *Minnesota Med* 9 3, i, 26 [265]

The surgical treatment of the writer as tuberculous of the kidney W WALTERS *Minnesota Med* 9 3, vi, 397 [263]

Bladder Urethra and Penis

Some cases of suppurative penicillitis A L CURTIS *J Urol* 9 3, ix, 4

Perineal and pelvic cellulitis after certain cystostomies or suppurative prostaticectomies. LUTTS and ROBERT *J Urol* 1913, xii, 31 [263]

Rupture of the bladder A GROVER *Canadian M Am J* 9 13, xii, 39

Cystoscopy and the general practitioner F F HARRIS *Illness M J* 1913, xii, 37

Bladder diverticula V BIL ZIEGLER *J urol Chir* 9 13, xii, 390

The diagnosis and treatment of bladder diverticula H ROSENBERG *Zieglers J urol Chir* 1913, xii, 449

A case of diverticulum of the bladder in the inguinal canal H E STRAIN *Med Press* 19 3, ix, 378

Diverticula of the bladder in children A HYMAN *J Urol* 9 3, ix, 41 [264]

A spectrum of diverticula of the bladder J E LINDSEY *Proc Roy Soc Med Lond* 9 13, xvi, Sect Urol 43

A case of malakoplakia J THOMSON WALKER and F J F RABBITT *Proc Roy Soc Med Lond* 9 3, xvi, Sect Urol 13

Tuberculosis in an hourglass bladder (diverticulum) DROVETZKY and DA J de Méd de Bordeaux, 19 3, xvi, 378

Alkaline concretions of the bladder with the report of case treated with Bauginen bacilli W M CONNOR *South M & S* 1913, lxvii, 35

Cystoscopic lithotripsy C W BATTISTON *Am J Surg* 9 3, xxiix, 60

Ten bladder tumors A L RATES *Clifton Med Bull* 19 3, ix, 37

Fibrosis of the urinary bladder with the report of case I S KOLL *J Urol* 9 3, ix, 453

A specimen showing the interior of the bladder six months after extensive resection for carcinoma with transplacation of the right ureter J FROST *Proc Roy Soc Med Lond* 9 3, xvi, Sect Urol 43

A method for the introduction of radium needles into tumors of the bladder J H CLYDEMAN *Boston M & S J* 9 13, cxxxviii, 816

A consideration of procedure in the surgery of the bladder J E MCCARTHY *J Urol* 1913, ix, 46

A new approach to the urinary bladder J MERRILL *Zentralbl f Chir* 9 3, l, 358

Concurrent diverticula of the urethra M G RANK *Memphis M J* 9 3, 363

T cases of urethrostomy I DEUTSCH *Zieglers J urol Chir* 19 3, ix, 47

Primary carcinoma of the urethra H CILIX and N K FOSTER *Surg Gynec & Obst* 9 3, cxxxv, 473 [267]

Primary carcinoma of the male urethra H I KERT *Arch Surg* 19 3, vi, 839

Resection of the urethra with mobilization and suturing of constrictor structures and fistula N N PIERCE *Westschweizer Ges* 9

A congenital epithelial cyst of the prepuce C ROLLIN *Pediatrics* 1913, xxi, 303

Two cases of glandular epispadias J S JOE *Proc Roy Soc Med Lond* 9 13, xvi, Sect Urol 30

A modification of the operation of Rockwell for hypospadias S C HARVEY *Ann Surg* 9 13, lxxvii, 7

Genital Organs

A consideration of the non venereal infected prostate W T WOOTTON *J Arkansas M Soc*, 9 13, xii, 923

A case of cyst of the prostate J THOMSON WALKER *Proc Roy Soc Med Lond* 9 13, xvi, Sect Urol 1

Renal insufficiency in prostatic hypertrophy O DUTREIX *Berlin & Klin Woch* 9 13, cxxxix, 70

The operability of prostatic obstruction J D BARRY *Boston M & S J* 9 13, cxxxviii, 755

Vasectomy as a method of treatment of prostatic hypertrophy H LAMAC *Klin Wochenschr* 9 13, ix, 253 [267]

A case of aberrant prostatic nodules J THOMSON WALKER *Proc Roy Soc Med Lond* 1913, xvi, Sect Urol 3

Primary carcinoma of the prostate with extensive glandular enlargement and pain along the course of the sciatic nerve J B HALLARD *Canadian M Am J* 1913, xii, 213

Primary lymphosarcoma of the prostate D STRAUSS *Arch. Surg* 9 13, vi, 755

Surgery of the prostate T L HANNOON *Lancet*, 1913, cccv, 901 *Brit M J* 1913, l, 7

The permanent problem in prostatectomy A L CURTIS *Boston M & S J* 1913, cxxxviii, 669

An address on some problems of prostatectomy J THOMSON WALKER *Brit M J* 9 13, l, 33

Prostatectomy pre-operative operative, and postoperative treatment H H YOCUM *Berg Gynec & Obst* 19 3, cxxxvi, 380 [267]

One hundred consecutive cases of prostatectomy O LYONS *Colorado Med* 9 3, ix, 7

Suprapubic prostatectomy in two stages, its application and its fallacies W M SUTTER *Colorado Med* 1913, ix, 24

Prostatectomy N L BORD *South M J* 9 13, xvi, 381

Some disputed points in suprapubic prostatectomy G R LYNN *South M J* 9 3, xvi, 389

Discussion on prostatectomy H W E WALKER, H W MCKAY A NELSON and others *South M J* 1913, xvi, 39

Prostat removed by prostatectomy weight as of 340 gm R H J SA *Proc Roy Soc Med Lond* 9 13, Sect Urol 43

The content of the seminal vesicles in relation to other autopsy findings F BRACE *Zieglers J urol Chir* 1913, ix, 403

Genitourinary vascularities and its importance in the prognosis of gonorrhea H JENKINS *Med Ann* 1913, xii, 31

X-ray contrast in men E MARKOVITS *Memphis and Wochenschr* 9 13, lxv, 457

Hydrocele in infants report of certain forms observed many years VALLERT RADOT and RALIS *Presse med*, Par 9 13, cxxx, 430

The development of non gonorrheal epididymitis V WALKER *Zentralbl f Chir* 9 13, l, 80

A case of myosarcoma of the epididymis J THOMSON WALKER *Proc Roy Soc Med Lond* 1913, xvi, Sect Urol 3

A case of ectopic testis A C MORSON *Proc Roy Soc Med Lond* 9 3, xvi, Sect Urol 43

Operation for cryptorchidism E KUTZNER *Gyneco Gend* 9 13, 68

Changes in the testis caused by disturbances of the local circulation A KOTZ *Acta archie med exp imp* 1913, 933, 775

Tumors of the testes C W JEFFERSON *Am J Surg* 9 3, cxxxix, 1

Malignant tumor of the testis, orchidectomy, cauterization, cure case report W M BRIDGES *Am J Surg* 9 3, cxxxix, 8

Miscellaneous

- Urologic problems and diagnosis R P KILL Illinois M J 9 3, xlii, 376
 Urothron is not diuretic B SAAD Presse med Par 9 3, xxii, 577
 The relation of roentgenology to urology J R CAULK J Radiol 93, iv, 33
 Surgical diseases of the urinary organs early recognition W DOWNING J Los State M Soc 93, xii, 30
 A plea for the early diagnosis of tuberculosis of the urogenital tract R L DOWNMARKEN Med Times, 9 3, h, 7

- Observations on the surgery of the genito-urinary system H RIECK Ztschr f urol Chir 9 3, xii, 334
 Menstrual and hypertonic hematuria H STRAUSS Ztschr f urol Chir 9 3, xii, 84
 Hemoglobinuria in hemolytic jaundice H Z GRIFFY Arch Int Med 93, xiii, 573
 A preliminary note on the value of intra-eneous injections of acriflavine in the treatment of gonorrhea O H WOOD J Roy Army Med Corps, Lond 9 3, xi, 367
 The large calculus removed from the perineum of male aged 6 in Margate Cottage Hospital W G SUTCLIFFE and C NITCH Proc Roy Soc Med Lond 9 3, xvi, Sect Urol 36

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- Congenital malformations of the extremities in an infant and its mother C LAFOUTRE Rev d'orthop 9 3, xiv, 37
 Diseases of the epiphyses in youth O HETTINGER and H EVERT Klin Wochenschr 9 3, iv, 397 444
 Unusual bone changes in partial gipsyism H HOLTMEIER and L KOPPEL Fortsch d Geb d Roentgenstrahlen, 93, xiv, 59
 Cystic disease of the bones study of fifteen cases A P C ASHCROFT R S BROWNE and C Y WHITE Arch Surg 93, vi, 66
 Rickets and the lower limbs C L GARCIA Semina med 93, xii, 749
 The treatment of acute infectious osteomyelitis by transfusion with oxenized blood M J SYMONETT J O'DRISCOLL and F D SUTTON Am J Surg 9 3, xxxiv, 8
 Problems of acute osteomyelitis N G SUTTON Med J Australia, 93, 5 7
 Piglet disease (osteitis deformans) report of four cases S A MURPHY Chilton Med Bull 9 3, ix, 30
 Trauma and tuberculosis of bones and joints F ZOLLINGER Schweiz med Wochenschr 93, ix, 105 26 54 [271]
 The differences in the X-ray picture between erosive and productive tuberculosis of bone and their value as surgical indications M FLEISCH THIERSTADT Fortsch d Geb d Roentgenstrahlen 93, xiii, 299
 Radiotherapy for tuberculosis of bones and joints A B GILL Ann Surg 93, lxxvii, 620
 The results of staphylococcus infection of bone W MARTIN Surg Clin N Am 9 3, xi, 409
 Hypertrophic osteoarthropathy L JEWELL Fortsch d Geb d Roentgenstrahlen 93, xiii, 506
 Spongy aneurysms of the long bones G H EDINGTON Glasgow M J 9 3, xvi, 273
 Benign giant-cell tumor of bone its diagnosis and conservative treatment J C BLOOMGOOD Am J Surg 93, lxxvii, 95
 The diagnosis of sarcoma in bone E H EBBING J Am M Ass 93, lxxx, 439
 A case of molecular dystrophy P W O'BRIEN Med Press, 9 3, cxi, 357
 Impaction of the mandibles H MORTON and P HUNT J de chir 93, xv, 4 3
 Myositis ossificans D LEWIS J Am M Ass 9 3, lxxx, 28 [271]
 A case of arthritis due to dental sepsis diagnosed and treated as tuberculosis R C ELAMSKY Proc Roy Soc Med Lond 93, xvi, Sect Orthop 28

- Subcutaneous tearing of tendons J H DRILLMAN Nederl Tjdschr Geneesk 9 3, lxxv, 24 7
 Tendon regeneration E WAGNER Deutsche Ztschr f Chir 9 3, clxxvii, 69
 Acute infections of the tendon sheaths G VIMMER Ztschr f orthop Chir 9 3, xiii, 95
 Congenital elevation of the scapula A L FISHER California State J M 9 3, xxi, 303
 Volkmann ischaemic contracture J M JONES Semina med 93, xiii, 833
 Traumatic disturbance of nutrition of the os lunatum L SATTER Beitr klin Chir 9 3, clxxvii, 87
 Chronic traumatic edema of the dorsum of the hand and foot L CADENBACH Deutsche Ztschr f Chir 9 3, clxxvii, 283
 An unusual form of syndactyly H A T FAIRBANKS Proc Roy Soc Med Lond 93, xvi, Sect Orthop 30
 Hereditary polydactyly L R GROTE Ztschr f Konstitutionsl 93, ix, 47
 The causes of error in the radiologic examination of the vertebral column, and methods of avoiding them F SARACENI Policlin, Rome, 9 3, xxx, sess part 585
 The causes of error in the roentgenological examination of the vertebral column, and methods of avoiding them F SARACENI Policlin, Rome, 93, xxx, sess part 585
 Spina bifida A M PURDY and A KOROSOFF Med Falcult 9 3, 4
 Chronic arthritis, with particular reference to chronic arthritis of the small joints of the spine R PACHENSTER Arch f orthop Unfall Chir 9 3, xii, 246
 Acute osteomyelitis of the vertebrae A WAGNER Deutsche med Wochenschr 9 3, xiii, 8 [272]
 Painful humeralization of the first portion of the scapula LUND and LEVON Bell et mem Soc med d hop de Par 93, 35 xxxiii, 33
 Sacrocrural chordoma E F HERMAN and M INGALLS J Am M Ass 93, lxxx, 369
 Old and new facts concerning ossification of the pelvis H R SCHNEZ Fortsch d Geb d Roentgenstrahlen, 9 3, xiii, 66
 Osteomyelitis of the crest of the pubic bone A B KRYER J Am M Ass 9 3, lxxx, 145
 Arthritis of the hip with fistulization and fragmentation of the femoral head A BRACA and R MAMMARI Rev de chir 9 3, xiii, 69
 Abortive type of tuberculous hip joint disease A L NIELSON J Am M Ass 9 3, lxxx, 144
 Tuberculous disease of the hip joint C P B CLIBBER Med J Australia, 9 3, 3, 344
 Legg Calve-Perthes disease F MINDA Ljetč vjesnik, 93, xlv, 32

- Internal derangements of the knee joint J DUNLOP L
 5 Naval M Med 922, 276, 375
- Internal derangements of the knee joint new method
 of exposure L G T FORTNA Lancet, 9, 3, 351, 945
- A case of hypertrophic rheumatism of the knee R C ELLIS
 118 Proc Roy Soc Med Lond 9, 3, 272, Sect
 Orthop 27
- An apparently iatrogenic ankylosis of the patella
 S JOHANSSON Ztschr f orthop Chir 922, 218, 8
- Deviating osteochondritis of the knee J MOSE
 Arch franco belge de chir 921, 277, 3 [272]
- Paronychia tuberculosa of the knee X DILLON and
 J DILLON Proc Med Par 923, 330, 405
- Tarsal case of the ligamentum patella prop L SCHULZ
 171 Mediz Jahrb 9, 3, 80
- Hallux valgus and the form of the foot resulting from it
 T SANDERSON Handb Lach medik handb 9, 10, 543
- The technique of measurement of flat foot J SCHNEIDER
 Arch f orthop Unfall Chir 9, 3, 271, 475
- 7 cases of hookler disease P B RUTIN Proc Roy
 Soc Med Lond 9, 3, 21, Sect Orthop 28
- A case of hookler disease in the os scapulae tarsu
 H F H WOOD Hygiea, Stockholm, 9, 2, 1922, 408

Surgery of the Bones, Joints, Muscles, Tendons, Etc

- A table for bone surgery radio orthopedic table F
 56 11. Presse Med Par 9, 3, 273, 279
- The results of arthrodesis by Cramer method, and
 contribution to the study of bone transplantation W
 LARSEN Beitr klin Chir 9, 3, 273, 400
- The treatment of congenital pseudarthrosis of the
 anteroposterior graft C DEJANET and M PERIER J de
 chir 9, 3, 273, 40
- Transverse osteo-arthrosis of the neck created by bone
 graft J M ARTER Proc Roy Soc Med Lond 9, 3, 21,
 Sect Orthop 30
- Bone transplantation L MONACO Policlin Rome
 923, 222, 2, 107
- The surgical treatment of tuberculous disease of the
 shoulder joint L D ARTER Med J Australia 9, 3,
 5, 5
- A case of congenital salivariation of the humeri W
 GARRICK Proc Roy Soc Med Lond 10, 3, 21, Sect
 Orthop 30
- Unilateral urinary incontinence due to spina bifida
 occulta recovery following operation P DILLON and
 J LUTZ Bull et mem Soc med d hôp de Par 9, 3,
 28, 202, 105
- Orthopedic treatment of tuberculous ankylosis A & C
 Ztschr f orthop Chir 9, 3, 21, 30 [272]
- Arthrodesis of the ankle T K DE W Res exp
 de chir, 19, 2, 424
- A tension suture such permits immediate union F H
 LARSEN Boston M & S J 9, 3, 273, 85

Fractures and Dislocations

- Para articular fracture of the scapula A SIA MARI Semin
 med 19, 3, 273, 97
- The use of the Lane bone plate A W RALLS South
 M J 10, 3, 273, 375
- Conservative early treatment of recent simple fractures
 of long bones G T THOMPSON J Lancet 9, 3, 273, 225
- The treatment of all ununited fractures of long bones
 with special reference to the use of the osteoplastic graft
 H B THOMAS J Am M Ass 923, 10, 300 [272]
- The application of ankylosis metal rings in fractures
 SCHNEIDER Ugeskr f Læger 9, 3, 10, 273, 9

- The behavior of bone with reference to the mechanical
 action of metallic anchorage L O GASTRINI Ann Ital de
 chir 1922, 2, 6
- The influence of the X rays on the healing of fractures
 H TAJMARY Beitr klin Chir 923, 273, 330
- Studies on the calcification of callus E P LINCOLN
 Arch Surg 9, 3, 273, 334
- The treatment of the olecranon fracture by indirect
 incision F ROSE Lancet, 923, 273, 274 [272]
- Spontaneous luxation of both shoulders RIVARD and
 ROLLAND Bull et mem Soc med d hôp de Par 923,
 28, 202, 335
- Fracture of the acropolis E. BLOCK N Orleans M &
 S J 1923, 10, 701
- The treatment of peri articular fractures of the proximal
 end of the humerus L KITTRE Deutsche Ztschr f Chir
 923, 273, 245
- The late result of bone-graft of the humerus M
 HILL M Proc Roy Soc Med Lond, 9, 3, 21, Sect
 Orthop 30
- Permanent deformities after supracondylar fractures of
 the humerus H KASTNER Deutsche Ztschr f Chir 922,
 273, 245
- Anterior dislocation at the elbow joint F J TIERE Am
 Surg 9, 3, 273, 6
- Fracture of the coronoid process of the ulna H
 VERMILION Ugeskr f Læger 9, 3, 10, 273, 39
- Fracture of the lower end of the radius reduction on the
 fifth day by external manipulation C DEJANET Bull et
 mem Soc de chir de Par 9, 3, 273, 606
- Mobilization of the metacarpus RICHARDSON Mediz
 Jahrb 9, 3, 273, 69
- Two cases of carpal luxation, one complicated by frac-
 ture D PIRA An Fac de med Univ de Montevideo
 1922, 2, 600
- Fractures of the carpal bones and the formation of de-
 fects in the X ray picture M HARRIS Arch f orthop
 Unfall Chir 9, 3, 273, 37
- Recentral subluxation of the hip of traumatic origin A
 V. MIREUX Med J Australia, 9, 3, 273, 330
- The end results of the non-operative treatment of con-
 genital luxation of the hip SCHNEIDER Zentralbl f
 Ges f Chir Moskau 19, 3, 273, 124
- Late results of reduction of congenital dislocation of the
 hip E. I. ANDERSON, Babbot f Læger 19, 2, 273, 421
- A preliminary report of a new method of treating frac-
 tures of the neck of the femur E. D. MARTIN and A. C.
 KILPATRICK N Orleans M & S J 923, 273, 710
- Two cases of fractured neck of the femur in transverse
 boys W T G PUGH Proc Roy Soc Med Lond 1923,
 21, Sect Orthop 31
- Fracture of the patella V MIREUX Wratelscheque
 Dnyo 19, 3, 273, 7
- Myel fracture of the tibia with telescoping of the upper
 end of the fibula C DEJANET Bull et mem Soc de chir
 de Par 9, 3, 273, 606
- Malleolar fracture (500 cases) as reported in the Swiss
 Academic Insurance Institution during 1919 and 1920 H
 W. TIERIE Rev suisse des accid du travail, 1923,
 21, 1, 25
- Conservative treatment of the tibia of the lateral proximal
 ankylosis L. FORTNA and A. ARTER Ann d'orthop 1923,
 273, 3
- An operation for the relief of disability in old fractures of
 the calcaneus P B MACDONALD J Am M Ass 1923,
 1923, 3
- The open treatment of fractures of the calcaneus E
 BUCHNER Zentralbl f Chir 923, 1, 20
- Isolated luxation of the cuboid M LARSEN Bull et
 mem Soc de chir de Par 19, 3, 273, 690

Transfusion in the treatment of anæmia W W DUKES and D D STOUTER *J Missouri State M Ass* 1923, xii, 6
The cure of severe anæmia by blood transfusion P F ZECCHER *Policlinico* Rome, 1923, xxi, xxxi, xxxii, xxxiii, xxxiv, xxxv

Lymph Vessels and Glands

The symptoms and treatment of traumatic subcutaneous extravasation of lymph R BOVER *Deutsche Zeitschr f Chir* 1923, cxxvi, 53 [279]

Rupture of blood vessels in extremities affected by elephantiasis A W SANCORY *Medicheskaya Mysl*, 1923, 3
The surgical treatment of elephantiasis of the limbs C LITVINIK *J Os chir* 1923, xxi, 434

Miscellaneous

Continuous intravenous infusion E UNGER and H HIRSH *Therap d Gegoew* 19 3, bvi, 5 [279]

SURGICAL TECHNIQUE

Operative Surgery and Technique; Postoperative Treatment

The principles of the care of surgical patients G M BLACK *Am J Clin Med* 1923, xix, 56, 37, 413
Assistants in operations E LEXER *Munchen med Wchnsch* 1923, lxx, 460
War time gunshot wounds R H FOWLER *Med Times*, 1923, li, 107

The treatment of gunshot wounds (345) Translated by H E Sargent A Paris *Lippincott* Paris, 1923

Postoperative tetanus W D FRYON *Canadian M Ass J* 1923, xxi, 333

Cosmetic surgery of the skin D V C ROSSIGNOL *JAHA* Sept. 1923, lxx, 332, 333, 335, 338

Regarding the importance of groups in the development of postoperative complications, particularly post-operative sepsis H CHIRMAK *Arch f klin Chir* 1923, cxxvi, 196 [280]

The significance of Chvostek's sign in postoperative tetany S JATROB *Mitt d Grenzgeb d Med Chir* 1923, xxxvi, 356

Antiseptic Surgery, Treatment of Wounds and Infections

Skin injuries from electricity S JELLINEK *Wien klin Wchnsch* 1923, cxxvi, 57

Rivastol and wound infection from anaerobes of the soil C BATHOZ *Zentralbl f Chir* 1923, l, 458

The action of iodoal E BLOCK and F SCHRY *Klin Wchnsch* 1923, 747

A further discussion of gonorrhea and the presentation of new gonorrhea-vaccines H H YOUNG, E C WATTS, J H HILL, and D M DAVIS *Berg Gynec & Obst* 1923, cxxvi, 906 [280]

Gonococcal abscess treated by the injection of anti gonococcal serum LORI and LORI *Bull et mèm Soc. mtd d hôp de Par* 1923, 30, xxxix, 7

The use of yarrow in surgical tuberculosis E ROSSIGNOL *Munchen med Wchnsch* 19 3, lxx, 303

Tetanus N SPRINGER *Veroeffentl d Koenigs-Konstitutionspath* 1923, ix, 5

Changes in the water-granule cells in wound infection L ACHARY and G KERNSTADT *Veroeffentl d Koenigs-Konstitutionspath*, 9 3, ix, 51 [281]

Yarrow, study based on over 1,000 cases treated in American Bureau D HUN and A L JOHNSON *U S Naval M Bull* 1923, xxvi, 599

Polysaccharide antigenic serum A JONELLI *Scienze med* 1923, xxi, 93

Anæsthesia

Anæsthesia and anaesthetics C H BARTIN *Canadian M Ass J* 1923, xxi, 349

The theory of narcosis W FRIE and H GARD *Zeitschr f d ges exper Med* 9 3, xxx, 100 [281]

The anaesthetic action of pure ether H H DILL, C F HANFORD, and H KING *Lancet*, 1923, civ, 424 [281]

A study of iso-agglutinins before and after ether anaesthesia J G HUCK and S M PATTON *J Am M Ass* 1923, 3, lxx, 670 [281]

Ethylamine as gas anaesthetic A B LICHAUSEK and J B CARTER *J Am M Ass* 1923, lxx, 440

Intravenous narcosis H SCHREIBER *Munchen med Wchnsch* 1923, lxx, 570

The safety of local anaesthetics C NEUBER and J A HENRIKSEN *Internat J Orthodont Oral Surg & Radiol* 1923, vi, 370

Baitya as local anaesthetic E L VIKTOR *Am J Ophth* 1923, vi, 402

PHYSICO-CHEMICAL METHODS IN SURGERY

Röntgenology

X rays and X ray apparatus—an elementary course J K ROBERTSON *J Radiol* 1923, iv, 37

The auto-electronic X-ray tube of Lauefeld I S HIRACK *J Radiol* 1923, iv, 6

An instrument for measuring distortion due to the direct action of X rays E C HILL *Bull Johns Hopkins Hosp* 1923, cxxvi, 164

Röntgen ray silhouettes J J MOOREHEAD *J Am M Ass* 19 3, lxx, 1435

A method for the opaque roentgen examination of the stomach S G SCOTT *Proc Roy Soc Med Lond* 9 3, xvi, Sect Elect-Therap 35 [281]

The problem of stimulation of growth by the roentgen ray the results of biological experiments on plants G SCHWARTZ, A CARM and H SCHREIBER *Fortschr d Geb d Röntgenstrahlen*, 1923, xxi, 667

A handbook of roentgen and radium therapy J WEITZNER *Lippincott Klein and Henrich*, 1923

The effects of roentgen rays and radio-active substances on living cells and tissues L LOEB *J Cancer Research*, 1923, vii, 590

Injuries of the skin caused by the roentgen ray H T SCHREIBER *Fortschr d Geb d Röntgenstrahlen*, 1923, xxi, 81, 83

Measurement of dosage by means of ionization chambers W DUBOIS *Am J Roentgenol* 19 3, x, 900 [281]

- The effect of the roentgen rays on subcutaneous inflammations C KIRK *Deutsche Zeitschr f Chir* 923, clxxvi, 272 [283]
- Protective factors in modern highline X-ray work A SOLLAND *Am J Roentgenol* 9 3, 2, 304
- A new high voltage X-ray therapy S LANGE *Cincinnati J M* 923, iv, 3 [284]
- The blood: its deep roentgen-ray therapy by hydrogenase concentration, alkali reserve, sugar and non protein nitrogen E F HINCH and A J PETERSEN *J Am M Ass* 923, lxxx, 505
- Blood changes after radiation for abdominal tuberculosis P P GOTTSMAN *Fortschr a d Geb d Roentgenstrahlen* 923, xix, 85
- Roentgen radium-chemotherapy of malignant tumors S WILKIN *Moscow M J* 9 2, 11, 57

Radium

- The use and abuse of radium A D LITTLE *J Med Am Georgia* 9 3, xii, 80
- The effect of radium on the X-rays on enzyme action S C ROY and J J MORTON *Am J Roentgenol* 923, 4, 407 [285]
- Radium and surgery W H B ALEXANDER *Internat J Surg* 923, xxvii, 89

- The indications for radium treatment and summary of the results L A POMEROY *Ohio State M J* 923, xiv, 324
- The treatment of vascular nevus with radium R H ROLLAND and S McLEAN *Am J Dis Child* 923, xiv, 359
- The removal of angiomata with radium C SWANOV *J Med Ass Georgia* 923, xii, 8

Miscellaneous

- Dathermy and medical practice H T CURSON *Brit M J* 923, 1, 567 *Lancet*, 9 3, clxxv, 060
- Dathermy in surgery H FRIEDL *Deutsche med Wchnscr* 9 3, xix, 13 [286]
- Endotherapy: surgical adjunct in accessible malignancy and pre-cancerous conditions G A WRIGHT *Surg Gynec. & Obst* 923, xxxvi, 71
- Experiments on the bactericidal action of the violet ray E B FISHER *California State J M* 923, xxi, 8 [287]
- The effect of the ultraviolet rays on phagocytes D ALKELA *Deutsche med Wchnscr* 9 3, xivm, 1347 [288]
- Further indications for intensive hebothery H RUK *Strahlentherapie*, 922, xiv, 715
- Therapeutic results of chemotherapy in some cases of cancer R A BULLOCK and L U RESNAYTTI *Semane med* 9 3, xix, 786

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- Traumatic shock, some experimental work on crossed circulation M A McIVER and W W HAGGART *Surg, Gynec. & Obst* 923, xxvii, 54 [286]
- Severe shock following the injection of arsenobenzol Bourvis *J de med de Bordeaux* 9 3, xiv, 350
- The treatment of severe superficial burns in children B ROBERTSON and G BOND *Am J Dis Child* 9 3, xiv, 165 [286]
- Surgery in diabetic patients H CONNER *N York M J & Med Rec* 923, cxvii, 606
- Surgery and diabetes E L YOUNG, JR *Boston M & S J* 1923, clxxviii, 767
- The major infections W J Mayo *Illness M J* 19 3, xxi, 583
- The treatment of leprosy W DUKERVILL *J de med de Bordeaux* 923, xiv, 51
- Three cases of tropical sores L A ANDREWS *J Roy Army Med Corps, Lond* 923, xl, 37
- Ischemic fat necrosis C E FAXE *Ann Surg* 9 3, lxxvi, 513
- Cancer the tribulation terrortest of diseases S HARRINGTON *Virgiana M Month* 923, li, 85
- Suggestions concerning the etiology of cancer from chemical point of view O P TURNER *Practitioner* 923, cx, 305
- Remarks on the evolution of carcinoma and the pathological physiology of carcinomata M RICHARD *Bull et mem Soc med d hop de Par* 1923, 36, xxxix, 92
- The nuclei-cytoplasmic ratio and cancer B SCHROEDER *J Cancer Research*, 922, vii, 305
- Studies based on malignant tumor of the rabbit I The spontaneous tumor and associated abnormalities W H BROWN and L PRANCE *J Exper Med* 923, xxvii, 601
- Studies based on malignant tumor of the rabbit II Primary transplantation and elimination of co-existing

- syphilitic infection L PRANCE and W H BROWN *J Exper Med* 923, xxvii, 63
- Carcinoma in youth W LAVOSTOV *Med Herald* 9 3, xix, 30
- Multiple malignant tumors G GLUSCHKOWSKI *Wirtschaftebe Dtsch*, 922, v, 260
- The relationship of cellular differentiation, fibrosis, hyalinization, and lymphocytic infiltration to postoperative longevity of patients with epidermoid-cell epitheliomas of the skin and lip L D POWELL *J Cancer Research*, 1922, vii, 371
- The urgent need for education in the control of cancer J E ADAMS *Proc Roy Soc Med Lond* 1923, xvi, 30
- Fever as symptom of visceral cancer L H BRIDGES *Med Clin N Am* 9 3, vi, 149
- A new form of metastatic reaction in malignant tumors O IZAR *Klin Wchnscr*, 923, ii, 64
- The influence of inorganic salts upon tumor growth in albino rats K SUZUKI and S R. BRIDGEMAN *J Cancer Research*, 1922, vii, 330
- The salt content of malignant tissues G L ROSENBERG and O F KREIBER *J Cancer Research*, 922, vii, 417
- Some general principles deduced from the present status of anti-cancer therapy *Cancer Commission Presse med*, Par 9 3, xxxi, suppl 736
- The treatment of malignant tumors E KRUTER *Moscow med Wchnscr* 923, lxx, 431
- Preliminary report on my treatment of cancer V LEVITSKY *Serb Arch f d ges Med* 923, xiv, 14 [287]
- The future surgery of cancer *Sloveny Rev expd de chir* 922, iv, 476

General Bacterial, Mycotic, and Protozoan Infections

- Calcium therapy in tuberculosis M ROMANOV *Polska Rome*, 923, xxx, cxvii, 617

- Ultra violet energy in tuberculopathies A J PACER
Ohio State M J 923 xix, 333
- Natural and acquired streptococcus immunity I P
GA and L F MORSEY J Am M Ass 19 3, 1925, 298
- Actinomycosis treated with copper sulphate R H H
Ann Surg 923, lxxvii, 68

Ductless Glands

- Discussion on the present position of endocrinotherapy,
S VINCENT G R MURRAY, W R GLOVE, H VINTA, and
others Proc Roy Soc Med Lond 19 3, xvi, Sect
Therap & Pharmacol 9

Surgical Pathology and Diagnosis

- The preservation of the natural colors in gross specimens
O KLOTZ J Lab & Clin Med 923, xii, 514
- Functional investigations of endocrinization Von GROSZ
Monatschr f Kinderh 923 xxv, 59
- The mechanism of bacteriostasis J W CHURCHILL
J Exper Med 9 3, lxxvii, 543 [287]
- The antagonism between diphtheria and colon bacilli
and search for its practical utilization V A V DEN RICK
Zschr f d ges exper Med 9 2, xix,
- Trephination of the sternum, simple method of removing
bone marrow for diagnosis during life C SHERPATIN
Deutsche med Wchnschr 923, xlv, 86 [287]

Experimental Surgery

- Experimental studies on the influence of decomposition
products of the endocrine glands on tumor growth in mice
D ENGEL Zschr f Krebsforsch 923 xix, 339

Hospitals; Medical Education and History

- The new Boston Lying In Hospital COOMBS, SE
TRICK and HOWLAND Mod Hosp 1923, xix, 437
- Light hundred years of service at St Bartholomew R
H P OMER Mod Hosp 1923 xix, 409
- The liability of the hospital for the acts of its servants
J A LANE Mod Hosp 923 xix, 479
- Ecology of Jenner G MARANO Siglo xix 1923 lxx
429
- The ophthalmic history of Samuel Pepys R R JAMES
Brit J Ophth 923, vii, 23

Medical Jurisprudence

- Surgical diagnosis and legal medicine P RIVERO
Rev med de la Suisse Rom 9 3, xix, 337
- Care required of hospital in the treatment of the eye
Derrick vs Portland Eye, Ear Nose, and Throat Hospital
200 Pac Rep p 344 [287]
- Malpractice in reducing fractures Berkholz BOERPE
90 N W Rep p 800 [283]

OCTOBER, 1923

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G., C.B., Leeds
PAUL LECÈNE, Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED Gynecology and Obstetrics	JAMES P. FITZGERALD Surgery of the Eye
LOUIS E. SCHMIDT Genito Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
PHILIP LEWIN Orthopedic Surgery	Nose and Throat

CONTENTS

I. Authors	ii
II. Index of Abstracts of Current Literature	iii
III. Editor's Comment	x
IV. Abstracts of Current Literature	309-405
V. Bibliography of Current Literature	406-426

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Offices 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain Baillière, Tindall & Cox, 6 Henrietta St., Covent Garden, London, W. C.

- SYDNE, M. Statistical Discussion on Goiter
 DE QUEYRIAT, F. The Pathologic Physiology of the
 Different Varieties of Goiter and Their Influence
 on the Biology
 WAGGONER, C. The Parasitic Etiology of Endemic
 Goiter
 MARINE, D. The Prevention and Treatment of
 Simple Goiter
 GEESE, G. W. X-Ray and Radium Treatment of
 Goiter
 W. TEE, ORTH, S. J., COLE, L. G., FRASER, C. R.
 and Others. Discussion of Symptomatic
 Goiter
 FOSS, H. L. The Surgical Treatment of Goiter
 DE QUEYRIAT, F. Protection of the Parathyroid
 Glands
 URSKILL, J. The Question of Decease After
 Thyroidectomy
 PORTER, C. A. An Analysis of My First Results in
 Thyroid Surgery
 MAYO, C. H., and BOOTHBY, W. M. The Mortality
 Rate Following Operations on the Thyroid Gland
 KESSER, L. and HYMAN, H. T. Studies of Graves'
 Syndrome and the Involuntary Nervous
 System. II. The Clinical Manifestations of
 Disturbances of the Involuntary Nervous
 System (Autonomic Imbalance)
 ERLING, L. X-Ray Treatment in Basedow's
 Disease
 FRIED, C. The Röntgen Ray Treatment of Basedow
 Disease

SURGERY OF THE NERVOUS SYSTEM

- Brain and Its Coverings; Cranial Nerves
 MICHAEL, J. C. The Old Head Injury Case
 MARTIN, P. and COMBES, H. Primary Gliomas of
 the Chiasm and Optic Nerve in Their
 Intracranial Portion
 HIRCHBERGER, C. Resection of the Choroid Plexus
 in Severe Unilateral Internal Hydrocephalus
 COMY, E. Gliomata of the Hypophysis
 LEVISON, L. A. and ALDER, F. W. Gliomas of the
 Optic Thalamus
 BERGMAN, C. W. and GERSHBERGER, H. J. In
 teral Hemorrhagic Pachymeningitis in Infancy
 Report of Five Cases
 Spinal Cord and Its Coverings
 VINT, H. R. Acute Ascending Meningomyelitis
 Possibly Resulting from Anaphylactoid Therapy
 Peripheral Nerves
 STROCKY, B. Artificial Nerve Branches for the
 Inervation of Paralyzed Muscles
 HERMAN, C. H. The Stiefel Operation for Spastic
 Paralysis
 Sympathetic Nerves
 FORD, R. K. A Note on the Treatment of Chronic
 Ulceration of the Lower Extremities

SURGERY OF THE CHEST

- Chest Wall and Breast
 ROWTHER, C. Cancer of the Breast
 Trachea, Lungs, and Pleura
 LEE, A. Pulmonary Embolism Following the
 Filling of Plethra with Beck's Resemith Paste
 HERRIN, G. J. Lung Abscess
 SANTE, L. R. A Study of Lung Abscess by Serial
 Radiographic Examination
 BRYCE, H. L. Empyema, an Analysis of 100 Cases in
 Relation to Treatment
 CAMEROV, H. C. and OSMAN, A. A. Empyema in
 the First Ten Years of Life with Discussion
 of the Value of Immediate Resection of Rib
 Heart and Pericardium
 SALMON, R. W. A. Artificial Pneumopericardium
 GARDNER, C. Pericardiectomy for Purulent Pericarditis
 Esophagus and Mediastinum
 BUTLER, R. A. A Causative Factor in Cancer of
 the Esophagus
 Miscellaneous
 PHILIP, G. Subphrenic Abscess

SURGERY OF THE ABDOMEN

- Abdominal Wall and Peritoneum
 BECKER, A. The Treatment of Gangrenous Pericardial Hernia
 BURCHARDT, H. Bilary Peritonitis Without Perforation
 VITAL, A. A. A Solid Tumor of the Mesentery
 Intestine
 Gastro-Intestinal Tract
 FONGSILL, G. Studies of the Mechanism of Movement of the Mucous Membrane of the Digestive Tract
 LUTAS, W. P. The Diagnosis and Treatment of Pyloric Stenosis
 CUTLER, E. C. and NEWSON, F. C. Perforated Ulcer of the Stomach and Duodenum
 DOWNEY, W. A. Hour Glass Constriction of the Stomach
 NIELSEN, N. A. The Results of the Medical Treatment of Gastric and Duodenal Ulcer
 ALMSTADT, R. Three Cases of Syphilis of the Stomach
 PRYOR, G. Primary Sarcoma of the Stomach and Twelve The Traumatic Causes of Tumors
 CHRY, L. and P. L. N. Delection of the Biliary and Pancreatic Secretions by Jejunopneumostomy as Complement of Gastro-Enterostomy or Gastrojejunostomy

Miscellaneous

- BERGHE, K. J. The End Results of the X Ray Treatment of Cancer at the Freiburg University Gynecological Clinic, 19 2-1916 363

OBSTETRICS

- Pregnancy and Its Complications
 DAY H F Diet During Pregnancy 360
 WILLIAMS, P F Pregnancy and Labor in Very Young and Elderly Primiparae 369
 TRUCK, F B The Pathologic Reaction of Tissue Extract (Cytost) Liberated in Pregnancy 360
 DOCA, E, and ROCKAR, R The Diagnosis of Tubal Pregnancy Coronal Pregnancy 360
 HAYS, H E, and POTTER, I W The Symptom and Signs of Extra Uterine Pregnancy At or Near Term, with Report of Two Cases, and the Treatment of Late Ectopic Gestation, Together with a Review of the Literature and Recorded Cases 370

Labor and Its Complications

- WILLIAMS, P F Pregnancy and Labor in Very Young and Elderly Primiparae 369
 ANDERSON, J O Do Present Day Efforts Toward the Elimination of the Second Stage of Labor Constitute a Forward Step in Practical Obstetrics? 370
 DROGEM, L A Discussion of the Factors Influencing Breech, Cephalic, and Transverse Presentations 370
 CAMEROV, S J The Technique of Cesarean Section 371
 WHITINGHOUSE, B and FEATHERSTONE, H A Note on Two Cases of Cesarean Section under Spinal Anesthesia with Tetracaine 371

Puerperium and Its Complications

- WATSON, B P The Treatment of Puerperal Infections 37

Newborn

- CRITCHFIELD, J N The Hemorrhages of the Newborn 371

GENITO-URINARY SURGERY

Adrenal, Kidney, and Ureter

- ESCHENBACH, D N Double Kidney 373
 KISTE, N M, and PUTTENDEN, D S Jr Chloride Retention in Experimental Hydropnephrosis 374
 HYMAN, F and BELL, A E Experimental Hydropnephrosis The Failure of Ureteral to Affect Its Rate of Development 374
 GUTVITZ and JEANVIER, Partial Nephrectomy in Kidney with Two Ureters 374
 WENNER, M B Nephrography Common Diagnostic Errors 374
 DORTCHMAN, G Renal Insufficiency in Prostatic Hypertrophy 380

Bladder, Urethra, and Penis

- SACCHI, C Cystadenoma of the Bladder 37
 KING, F The Treatment of Epithelial Tumors of the Urinary Bladder Based on Consideration of 6 Cases Personally Observed and Treated 373
 NELL, W J The Treatment of Carcinoma of the Bladder 377
 CROSSLAND, A H Complications Occurring in Gonorrheal Urethritis 375

Genital Organs

- D AGATA, G Amputation of the Rectum and Total Prostate-Vesiculectomy for Associated Neoplastic and Tuberculous Processes 377
 LAMER, H The Absence of the Prostate Associated with 1 Adenoma Disease, Notably Hypopituitarism with the Histories of Eighteen Cases 379
 DORTCHMAN, G Renal Insufficiency in Prostatic Hypertrophy 376
 PARRY and VERNER, The Treatment of Carcinoma of the Prostate with Radium 376
 WICKLER, V The Development of Non Germinal Epithelioma 376
 LINDQUIST, A New Experimental Data on the Question of the Seat of the Endocrine Function of the Testicle 376

Miscellaneous

- DILLON, J R Precancerous and Early Cancerous Lesions of the Genito-Urinary Tract 38

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

- Conditions of the Bones, Joints, Muscles, Tendons, Etc
 HENNING, G H Spongy Excision of the Long Bones 383
 KOSLOVSKY, A A The Morphology of the Blood in Phosphorus Intoxications of Bones and Joints 383
 BLOODGOOD, J C Bone Tumors Sarcoma, Periosteal Group Qualifying Type—Benign Qualifying Periosteal and Myositis 384
 HALLBERG, A C Fibrous Aneurysm, Its Prevention and Remedy 384
 FORTNER, R A A Clinical Study of Thirty Cases of Muscular Dystrophy 384
 TURLEY, A H Dupuytren's Contracture of the Palmar Fascia 38
 MOORE, B H Abnormalities of the Fifth Lumbar Transverse Processes Associated with Sacral Pain 385
 VETTER, H C W Tuberculosis of the Sacro-Iliac Joint 386
 BLAINE, E S Sacro-Iliac Arthritis Oligosternum 387
 J. VALER, M On Coxal Pains and Its Classification 387
 JOHANSSON, S An Apparently Rhabdomyoma Disease of the Patella 387

- Surgery of the Bones, Joints, Muscles, Tendons, Etc
 CAMPBELL, W C Transference of the Crest of the Ilium for Flexion Contracture of the Hip 387

- FREED, A G T Internal Derangements of the Knee Joint A New Method of Exposure 390
 STEINWALD, A The Treatment of the Flail Ankle Panosteal Arthrodesis 39
 DE MATA, T R Arthrodesis of the Ankle 39

Fractures and Dislocations

- REHARD L Bone Grafts 30
 BARY L The Technique of the Operative Reduction in Old Luxations of the Shoulder 39
 HAYVICAR, A Wire Curving of the Olecranon by New Method 393
 TOWNE, E B Fracture Dislocations of the Carpal Bones 393
 DWALLIN, A Regarding Traumatic Luxations of the Spine 393

Orthopedics in General

- CONSTANTINE, M and MORFAT B W Managing Orthopedic Cases 393

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

- FLOWERS, L Anomalous of the Common Iliac Artery Gradual Occlusion by Ligation with Free Graft of Muscle 395
 KOLBY, L The Anatomy Clinical Aspects, and Treatment of Anomalous of the Superior Mesenteric Artery 395
 SCHNEIDER, L and GOLD, E Can Drainage Tubes Cause Erosion of Blood Vessels? 396

Blood and Transfusion

- MA, P C and MAGATH T B Studies on the Physiology of the Liver IV The Effect of Total Removal of the Liver After Pancreaticotomy on the Blood-Sugar Level 354
 KLEINOWSKI, A A The Morphology of the Blood in Pneumococcus Infections of Bones and Joints 353
 BAUER, K H The Inherited and Constitutional Pathology of Hemophiles 396
 DYER, S C OGDEN, D P H, and BROOKS C H On the Inheritance of the Specific Iso-Agglutinable Substances of Human Red Cells with Note on the Possible Existence of Lethal Factor 396
 J VEEEN, W The Intravital Course of Hemolysis, with Discussion of Blood Transfusion and the Development of Shock as the Result of Transfusion 397
 SEPERSTEIN, D M Intraperitoneal Transfusion with Citrated Blood A Clinical Study 397
 TENBROECK C and BAUER J H Studies on the Relation of Tetanus Bacilli in the Digestive Tract to Tetanus Antitoxin in the Blood 397
 HIRSH, E F and PETERSEN, A J The Blood with Deep Roentgen Ray Therapy Hydrogen Ion Concentration Alkal Reserve, Sugar and Free Protein Nitrogen 399

SURGICAL TECHNIQUE

- Operative Surgery and Technique Postoperative Treatment 390
 DICKER, E B The Radical Operation in Chronic Suppurative Otitis Media A Consideration of the Technique The Use of the Primary Skin Graft and the Result of the Operation with Particular Reference to the Function of the Organ 37
 NEW, G B The Use of the Delayed Flap in Secondary Operations on the Palate and Astrum 380
 URSKYL, J The Question of Drainage After Thyroidectomy 388
 CREE, L, and PUL, N Deflection of the Biliary and Pancreatic Secretions by Jjunojunostomy as Complement of Gastro Enterostomy or Gastrectomy 345
 KAISER, F J The Movable Liver and Its Successful Treatment A New Method of Operation Based on the Principle of Supporting the Liver from Below and Plastic Procedure on the Abdominal Wall with Doubling of the Aponeurosis 355
 WILKINSON, A O Drainage in Intra-Abdominal Infection 354
 CAMPBELL, W C Transference of the Crest of the Ilium for Flexion Contracture of the Hip 387
 FREED, A G T Internal Derangements of the Knee Joint A New Method of Exposure 390
 STEINWALD, A The Treatment of the Flail Ankle Panosteal Arthrodesis 39
 DE MATA, T R Arthrodesis of the Ankle 39
 BARY L The Technique of the Operative Reduction in Old Luxations of the Shoulder 39
 FLOWERS, L Anomalous of the Common Iliac Artery Gradual Occlusion by Ligation with Free Graft of Muscle 395
 SCHNEIDER, L, and GOLD, E Can Drainage Tubes Cause Erosion of Blood Vessels? 396

PHYSICO-CHEMICAL METHODS IN SURGERY

Radiogenology

- GOUDRON, E, and EMBLECK, D E An X Ray Study in Intubation 3
 GROOVER, T A CHRISTIE, A C and ALBERT, E A A Review of the Treatment of Hyperthyroidism by All Methods, with Summary of the Authors Experience with Roentgen Therapy 33
 GRIER, G W X Ray and Radium Treatment of Gaster 386
 EDWARDS, L X Ray Treatment in Basaloid Disease 380
 FRIED, C The Roentgen Ray Treatment of Basaloid Disease 380
 SAVITZ, L R A Study of Lung Abscess by Serial Radiographic Examination 337
 SALAMOND, R W A Artificial Pneumopericardium 339
 BOWEN, H H and ANDERSON, F W The Treatment by Radiation of Cancer of the Rectum 351

BERGER, K. The End Results of the X-Ray Treatment of Cancer at the Freiburg University Gynecological Clinic, 1913 to 1916	368	STROM, M. Statistical Discussion on Galls	324
IRVING, A. C., OGDEN, B. H., JACOBY, A., and WATTS, J. E. Studies of the Effect of the X Rays on Glandular Activity	368	DE QUERVAIN, F. The Pathologic Physiology of the Different Varieties of Cancer and Their Influence on the Biology	314
FILSHIE, Deep X Ray Therapy	368	WHEELER, C. The Parasitic Etiology of Endemic Galls	315
HIBSON, E. F. and PETERSEN, A. J. The Blood with Deep Roentgen Ray Therapy. Hydrogen Ion Concentration, Alkali Reserve, Sugar and Non-Protein Nitrogen	368	MARINE, D. The Prevention and Treatment of Simple Galls	317
WOOD, F. C. Recent Cancer Therapy	369	W. TERWORTH, S. J. COLE, L. G. FRANK, C. H. and Others. Discussion of Symposium on Galls	316
	404	ROWNTREE, C. Cancer of the Breast	316
		HEUER, G. J. Lung Abscess	316
		JACKSON, J. M. Acute Gangrenous or Perforative and Suppurative Retrocecal Appendicitis	318
Radiation		HILL, W. B. Intracranial Dysmenorrhea	313
GILES, G. W. X-Ray and Radiation Treatment of Galls	376	MELNER, S. R. The Practical Management of Dysmenorrhea	313
FORDICE, S. The Treatment of Severe and Persistent Uterine Hemorrhage by Radiation, with Report upon Forty-Five Cases	365	LESTER, H. The Absence of the Prostate Associated with Endocrine Disease. Notably Hypopituitarism with the Histories of Eighteen Cases	379
PAPIN and VERLING. The Treatment of Carcinoma of the Prostate with Radiation	380	DOBREVILLE, W. The Treatment of Leprosy	403
TURNER, D. The Use of Radiation in the Treatment of Disease	400	WINTERMAN, S. Diabetic Gangrene and Its Treatment	403
ALPERT, W. H. B. Radiation and Surgery	404	BROWN, W. H. and PEARCE, L. Studies Based on Malignant Tumor of the Rabbit. I. The Spontaneous Tumor and Associated Abnormalities	403
WOOD, F. C. Recent Cancer Therapy	404	SOCIETY, L., and BENNETT, S. R. The Influence of Iodine Salts upon Tumor Growth in Albino Rats	404
		WOOD, F. C. Recent Cancer Therapy	404
		SCHREIBER. The Future Surgery of Cancer	405
Miscellaneous			
REIN, H. Further Indications for Intensive Heliotherapy	404		
KOENIGER, G. and KATZ, H. Surgical Diathermy in Its Relation to Radiotherapy	405		

MISCELLANEOUS

Clinical Entities—General Physiological Conditions		Surgical Pathology and Diagnosis	
FENTON, R. A. Sarcoma from Swimming	317	LEWIS, W. S. The Status of Present Day Methods of Examination in the Diagnosis of Intestinal Tuberculosis	317
CARLES, J. Rhinopharyngitis. Their Role in Castagnoli and the Development of Certain Infectious Diseases	3	APPEL, F. L. and CAMEROV, G. A New Test for Pancreatic Efficiency as Aid to the Diagnosis of Gall Bladder Disease and Certain Obstructive Dyspepsia	315
THOMAS, W. S. and WALKER, C. W. Chronic Typhoid	313	KARL, M. H. The Diagnosis of Spleen Function	319

BIBLIOGRAPHY

Surgery of the Head and Neck

Head	406
Ey	406
Ear	407
Nose	407
Mouth	408
Throat	409
Neck	409

Surgery of the Nervous System

Brain and Its Coverings	4
Cranial Nerves	4
Spinal Cord and Its Coverings	4
Peripheral Nerves	4
Sympathetic Nerves	4
Miscellaneous	4

Surgery of the Chest

Chest Wall and Breast	4
Trachea, Lungs, and Pleura	4
Heart and Pericardium	4
Esophagus and Mediastinum	4
Miscellaneous	4

Surgery of the Abdomen

Abdominal Wall and Peritoneum	4
Gastro-Intestinal Tract	4 3
Liver, Gall-Bladder, Pancreas, and Spleen	4 3
Miscellaneous	4 6

Gynecology

Uterus	4 7
Adnexal and Per Uterine Conditions	4 7
External Genitalia	4 8
Miscellaneous	4 8

Obstetrics

Pregnancy and Its Complications	4 8
Labors and Its Complications	4 8
Puerperium and Its Complications	4 9
Newborn	4 9
Miscellaneous	4 9

Genito-Urinary Surgery

Adrenal, Kidney and Ureter	4 9
Bladder, Ureters, and Pross	4 9
Genital Organs	4 9
Miscellaneous	4

Surgery of the Bones, Joints, Muscles, Tendons

Conditions of the Bones, Joints, Muscles, Tendons	4
Surgery of the Bones, Joints, Muscles, Tendons	4 2
Fractures and Dislocations	4
Orthopedics in General	4 3

Surgery of the Blood and Lymph Systems

Blood Vessels	4 3
Blood and Transfusion	4 3
Lymph Vessels and Glands	4 3

Surgical Technique

Operative Surgery and Technique	4 3
Treatment	4 3
Antiseptic Surgery	4 3
Infections	4 3
Anesthesia	4 3
Surgical Instruments and Apparatus	4 5

Physico-Chemical Methods in Surgery

Röntgenology	4 5
Radium	4 5
Miscellaneous	4 5

Miscellaneous

Clinical Entities—General Physiological Conditions	4 5
Ductless Glands	4 5
Surgical Pathology and Diagnosis	4 5
Experimental Surgery	4 5
Hospitals, Medical Education and History	4 5

EDITOR'S COMMENT

THE continued interest in the question of thyroid disease is reflected in an important group of abstracts in this month's issue. Marine's paper on the prevention of goiter (p. 325), Grier's paper on the X-ray and radium treatment of goiter (p. 326) and the discussion following these papers (p. 326) form part of a symposium on goiter presented at a recent meeting of the Pennsylvania State Medical Association. The report of Mayo and Boothby on the mortality rate following operations on the thyroid gland (p. 328) and Porter's analysis of fifteen cases of malignant disease of the thyroid and 304 cases of thyroid toxemia from his service at the Massachusetts General Hospital (p. 328) indicate the result of surgical treatment of thyroid disease in two widely separated surgical centers. Edling (p. 330) reports the results of X-ray treatment of twenty-five patients with Basedow's disease, and Kessel and Hyman (p. 330) present an interesting discussion of disturbances of the involuntary nervous system and their relation to thyroid toxemia.

The protean question of malignant disease claims an important share of this month's abstracts. The treatment of neoplasms of the bladder is reviewed extensively in a comprehensive discussion by Kidd of the London Hospital (p. 375) on the basis of a personal experience of 161 cases. Neill (p. 377) discusses the results obtained in 142 cases of carcinoma of the bladder treated during the period from 1910 to 1922 at the Howard Kelly Hospital in Baltimore. Papin and Verlics discuss the technique of the treatment of carcinoma of the prostate with radium (p. 380) and the autopsy findings in four such cases. They call attention to the irritative effect of radium on the large bowel. Kolischer and Katz (p. 402) describe their method of combining surgical diathermy and radium in the treatment of malignant disease of the bladder, prostate, and uterus. Wood in a very interesting paper (p. 404) presents his view on the most effective treatment of various types of neoplasms. He suggests that the limitations of radium and the X-ray as

therapeutic measures are much more definite than has been indicated by advocates of radiation therapy in recent years. Turner reviews the result obtained by the use of radium at the Edinburgh Royal Infirmary (p. 400), and Berger (p. 368) reports the end results of X-ray treatment of cancer in the cases treated from 1913 to 1916 at the Gynecological Clinic at Freiburg. The small proportion of successful five-year results in spite of the fact that the average interval between the appearance of the disease and the beginning of treatment approximated eight months in all three types of malignancy reported—cancer of the breast, cancer of the uterus fundus, and cancer of the uterus cervix—indicates that the fight against malignant disease is still far from won. Pilger (p. 395) gives a careful description of the technique used in deep X-ray therapy at the Erlangen clinic.

The studies of Mann and Magath on the physiology of the liver one of which is reported in this month's issue (p. 354) and Kahn's discussion of splenic function (p. 359) indicate the increasing trend of surgery toward the basic study of physiology—of normal and perverted function.

Three papers on chronic otitis media, by Botter (p. 315), Dench (p. 317) and Thomson von Coksitz (p. 316) form an interesting symposium on this subject. The question of sinusitis and its etiological relationship to metastatic disease is receiving constant increasing attention. In connection with this subject Parker reports two cases of renal changes secondary to sinusitis (p. 310).

A number of other subjects discussed in this month's issue deserve particular attention. The management of orthopedic cases, by Constantine and Moffat (p. 193), acute retrocecal appendicitis, by Jackson (p. 350), traumatic rupture of the intestine, by Lockwood (p. 345), the surgical treatment of cancer of the mucous membranes of the mouth, by Hiedrich from Kuettinger's clinic (p. 199) are subjects of very definite and special interest to the surgeon.

INTERNATIONAL ABSTRACT OF SURGERY

OCTOBER, 1923

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Ferry G. The Diagnosis and Treatment of Fractures of the Base of the Skull. Thirty-One Cases. (Contribution à l'étude du diagnostic et du traitement des fractures de la base du crâne d'après 31 observations.) *Rev. d. chir. Par.* 9:3 July 7.

There is considerable diversity of opinion in regard to the treatment of fractures of the base of the skull. The majority of surgeons, however, still favor Quénu's method of lumbar puncture in series. This has been used at the Sencot surgical clinic at Strasbourg for the past three years.

This article is based on thirty-one cases treated by the Quénu method supplemented by the treatment of shock, the application of ice to the head, antiseptics of the facial cavities, and measures to keep the bowels open. Trephination was done subsequently in only two cases; both of these were fatal. The trephination was unilateral and subtemporal, and in both cases was attended by meningeal complications.

In the thirty-one cases there were fifteen deaths, a mortality of 48.38 per cent. Some of the fatal cases are so grave that any treatment is hopeless. In eight of the cases in which death resulted early the fluid drawn by lumbar puncture was almost pure blood but the pressure was no greater than normal. Accordingly there was not much localized compression and the efficacy of Quénu's operation in such cases appears doubtful. If the nine hopeless cases are excluded, the mortality falls to 7.7 per cent. In the sixteen cases in which recovery resulted the number of punctures varied from two to nine. The fluid drawn was bloody in five cases, blood stained in seven, blood tinged in five, and clear in one. It was under medium pressure in seven cases, under high pressure in eight, and under low pressure in one.

If the lumbar fluid is freely blood and under medium or slight pressure, very severe concussion and cerebral contusion must be feared rather than

compression. The prognosis is very unfavorable; neither puncture nor trephination gives much hope. If the fluid is less bloody or only blood tinged and under medium pressure or pressure slightly greater than normal, treatment by puncture or trephination offers a more favorable prognosis.

The symptoms of meningeal infection greatly modify the prognosis and even the therapeutic indications. In six of the thirty-one cases there appeared periods ranging from the fourth to the fourteenth day, but even in cases of post-traumatic meningeal reactions lumbar puncture is of the greatest curative value.

Ferry concludes from his study that lumbar puncture in series is most beneficial in fractures of the base of the skull. Subtemporal trephination may be done to supplement it when the occipital foramen is blocked and when there is localized cerebral compression.

W. A. BARR.

EYE

Mann, I. C. Some Congenital Anomalies of the Eye and Their Confusion with Acquired Conditions. *Lancet* 9:3 Oct. 743.

Lesser abnormalities of the eye may sometimes simulate pathologic states. The author calls attention to the similarity between the early stages of an optic neuritis and papilloedema and the pseudo-neuritis often associated with high hypermetropia and high degrees of astigmatism. The symptoms associated with high degrees of hypermetropia may simulate those of increased intracranial pressure. In certain instances, coloboma of the disk and glaucomatous cup may be confused. In the former the vessels are usually not seen at the bottom of the cup, while in the latter central vessels are seen and the fields show the characteristic contraction.

The conditions which may be confused with beginning glaucoma retinue are the various degrees of persistent hyaloid artery. The appearance of the anterior chamber in these cases is often of assistance.

In the former condition it is more apt to be narrowed, while in the latter it is normal or deeper than normal. In retinitis and choroiditis one must differ entiate between patches of exudate hemorrhages, areas of choroidal trophy, the presence of opaque nerve fibers either at the edges of the disk or along the courses of the larger vessels, the presence of the posterior vortex vein which may simulate a large hemorrhage and congenital coloboma of the choroid.

The congenital anomalies of the parts of the eye anterior to the vitreous are as a rule more obvious. The chief signs of an old iritis which may lead to confusion are irregularity of the pupil, the presence of organized exudate and adhesions to the anterior capsule of the lens, and the alteration in color. When there is irregularity of the pupil, coloboma of the iris, polycoria and corectopia must be considered.

True adhesions of the iris to the anterior capsule of the lens may occasionally be found in polycoria and corectopia. More commonly they are simulated by tags of persistent pupillary membrane. As a rule these are attached to the anterior surface of the iris a little way from the margin while the true iritic synechia springs from the edge of the pupil. In congenital heterochromia and the absence of signs of inflammation and trophy will be noted. Coloboma of the lids and congenital opacities of the cornea must be differentiated from the results of trauma.

Congenital ptosis may be unilateral or bilateral. In slight cases the lids may show movements associated with mastication and deglutition. In all cases of congenital ptosis the pupillary reaction and accommodation are normal. When the history is vague the possibility of a heretic syndrome, myasthenia gravis, incipient bulbar palsy and cerebral tumor or abscess must be considered. In cases of squint, congenital defects of the muscles or nerves must be ruled out. It should be remembered that inequality of the pupils may accompany marked dissimilarity in the refraction of the two eyes. Congenital nystagmus is generally associated with some defect which hinders central fixation and this must be looked for to allay the suspicion of neurological condition.

Abstracts B. Dreyer, M.D.

Parker W. R. Visual Changes Due to Glaucoma—
Report of Two Cases. *J. Michigan State U. Sys.*
1913, 332, 77.

Parker reports two cases of visual defect due to glaucoma, one case of blindness in one eye and vision reduced to objects in the other and one case of retrolental neovascularization with loss of central vision. In the first case clinical examination was negative except for suggestive X-ray findings. The second case was relieved by drainage of the sinuses following operation on the septum. The case histories in perimetric charts are given in detail.

The chief points of interest in the first case are the indefinite findings of the X-ray and nasal examination, the swelling of the disks, the lat-

choroidal changes, and the character of the field vision in the right eye varied from 6/4 to normal. Vision in the left eye varied from the ability to see 13 1/2 ft up and in only otherwise shadows, to normal in a period of two years ten months. The fields in this case showed concentric contraction for form and color with a segmental contraction down and in the right eye and up and in the left eye. In the right eye there was a enlarged blind spot, and in the left small scotoma between the disk and macula. Operation on the posterior ethmoid and sphenoid, with evacuation of 2 dr of pus from each side brought about an increase in vision and improvement in the fundus findings. The choroidal changes were noticed after operation, beginning with slight pigment migration below the inferior temporal vessels and below the macula. Later ophthalmoscopic examination showed slight pigment disturbance throughout the entire fundus.

In the second case vision at the onset was 6/6 in the right eye, and with the left eye the patient was able to count fingers up and out. External examination was negative. The tension was normal. The right eye showed clear media, hazy posterior vitreous, and a hyperemic disk. In the left eye the disk was edematous, the veins were engorged, and there was an indistinct focal reflex. The fields of the right eye were normal. In the left eye there was a large central scotoma and no green field. In this case the X-ray showed no evidences of disease in the sinuses and the sinuses were negative clinically. The nasal septum was deviated. Seven days after subconjunctival resection marked improvement in vision as noted. The central scotoma had disappeared.

Parker refers to the theories regarding the causation of retrolental neovascularization, especially those regarding sinusitis, and mentions three responsible factors, (1) pressure on the optic nerve by edema, (2) inflammation of the orbital portion of the optic nerve beginning in the orbital canal and (3) the presence of a general infecting or toxic agent in the blood. He believes that in the two cases reported the difference in the field findings was dependent upon varying degrees of pressure on the optic nerve and sheath due to edema of the nerve and the lining of the posterior ethmoid cells. It is a well known fact that cases of old pan sinusitis rarely show visual disturbances possibly because an immunity has been developed.

Wilbrand and Senger contend that cases of retrolental neovascularization should be classified into three groups as (1) total neovascularization with central scotoma, (2) peripheral atretical neovascularization with concentric contraction of the field, the central vision remaining intact, and (3) diffuse inflammation, as in acute iritis.

With regard to diagnosis the author states that reliance must not be placed entirely on the X-ray findings, and that the choroidal changes noted in Case 2 were due probably to the toxic element that produced the lesion causing the field changes.

In the treatment, drainage of the sinuses may be indicated on the basis of the field changes alone, provided that toxic substances which might produce similar field changes and certain general diseases such as multiple sclerosis are ruled out.

ACCREDITED B. DYKMAN, M.D.

Whitmore, A. Fundamental Considerations in the Correction of Squint. *Arch Ophth* 9 3 44, 243

Whitmore reviews various theories regarding squint and discusses the cosmetic and health benefits which are derived from operative interference resulting in parallelism. He advises his patients to discard their glasses after operation. He modifies Reese's operation by passing a No. 11 suture into the muscle proximal to the Prince forceps after the tendon has been divided at the scleral attachment. This causes the severed edges to bend outward. VINCENT WATKINS, M.D.

Mancilla, G. A. A Cavernous Angioma of the Orbit (Angioma cavernoso de la órbita). *Rev. med. de Sevilla*, 9 3 44, 26

The author reports the case of a man 29 years old who complained of pain in the left eye and over the left temporal area which was associated with prominence of the eye, diminution of vision, and occasionally double vision. The condition began five years previously. Ten years ago he had a catarrhal conjunctivitis in both eyes and the left eye remained inflamed for three months. Since then, all of the symptoms had been gradually increasing. There was no history of infectious diseases, syphilis, or injury.

Examination of the left eye revealed marked exophthalmos. The globe was pushed downward and inward. There was ptosis of the upper lid which was under marked tension. The conjunctiva was injected. The globe was of normal size and under normal tension. Vision was 20-40. There was limitation of the motion of the globe in all directions but especially upward. There was vertical diplopia. The fundus and media were normal except for slight hyperemia of the disk. The visual fields were normal for shape and color. The right eye was normal.

On palpation, circumscribed, movable regular non-fluctuating, non-pulsating soft mass was felt between the globe and the upper and outer rim of the orbit but not touched to either. This mass extended so far into the orbit that its entire extent could not be determined. On incisionation no bruit or souffle was noted. On aspiration, pure blood was withdrawn.

At operation the tumor, as exposed by making an incision over the upper and lateral border of the orbit and pushing the soft tissues back. It was found to extend as far as the apex of the orbit and to be situated in the funnel-shaped space formed by the ocular muscles. After its removal the wound was closed around a small drain. Healing was

complete in fifteen days. After a period of a few months all signs and symptoms had disappeared. Vision and the motility of the globe returned to normal.

The tumor was about 4 cm. in its widest diameter, red, and soft. Microscopic examination showed it to be a typical cavernous hemangioma with no evidence of malignant degeneration.

The author was able to find only eighty-three cases reported in the literature.

FRANKLIN P. SCHUSTER, M.D.

Roy, D. Tuberculosis of the Orbital Cavity. *Literature. Arch Ophth* 9 3 44, 47

The author states that diagnosis of tuberculosis of the eye made on the basis of ocular lesions associated with pulmonary tuberculosis, bone tuberculosis, or general tuberculosis in other parts of the body proved by the presence of the tubercle bacilli or pathologic tissue changes characteristic of tuberculosis is much more apt to be correct than diagnosis based only upon the reaction to the tuberculin test or benefit derived from injections of tuberculin. In reviewing the literature Roy was impressed with the frequent lack of thoroughness in the diagnosis, such as neglect to use known clinical serological and histological tests.

In this article he reports a case of tuberculous of the orbital cavity occurring in his own practice and betrays case reports from the literature.

C. CORRIE Y. WICK, M.D.

Williamson Noble, F. A. Endothelioma of the Orbit. *Br. J. Ophth* 9 3, 70, 1

Williamson-Noble reports two cases of endothelioma of the orbit.

Case 1 was that of a girl 15 years old who had proptosis of the right eye for two months. Movement out and down was greatly limited, and movement up and in slightly limited. The pupil was inactive and the disk pale. Vision was fingers at 4 ft. The eye was enucleated and the growth removed. The structure resembled carcinoma of the breast. A diagnosis of scirrhous endothelioma arising from proliferation of the endothelial lining of the blood vessels was made.

Case 2 was that of a boy 3½ years old. Examination revealed chemosis, distention of the pupil, some swelling of the disk, and proptosis. There was no perception of light. Movement was impossible. When the eye was enucleated the orbit was found filled with a hard mass which apparently passed through the sphenoidal fissure. The boy died with signs of an intracranial growth. The tumor contained bone and cartilage cells and involved the lachrymal gland. The optic nerve was not involved by the growth but showed signs of compression. While this tumor was not a typical endothelioma, it could not be regarded as sarcoma. It was rather a teratoma of the orbit with many endothelial cells forming blood spaces. VINCENT WATKINS, M.D.

Killick, C. The Treatment of Conical Cornea.
Br J Ophth 93, 264

Killick urges the more frequent use of Mackay's disk to diagnose early cases of keratoconus. He reports six cases. As a rule the treatment is surgical.

The pathology is not fully known. The cornea is greatly thinned and on microscopic examination Bowman's membrane is found intact but thinned and wrinkled. Descemet membrane is unchanged.

In early cases complete rest of the eye, the application of lens pressure bandage and general care are beneficial but do not cause flattening of the cornea.

The main operative measures are cauterization of the cornea, with or without perforation and outlined if necessary with (1) optical iridectomy and tattoo, (2) sclerectomy, (3) excision of the apex of the cone, (4) excision of the lens, (5) iridectomy or the iridocyclotomy operation of Critchett.

In one of the author's cases a simple cataract extraction was done. As the lens was brown transparent throughout, fair amount of after-cataract remained. Then, a Critchett found that vision in keratoconus is improved by narrowing the pupil or making it resemble a stenopæic slit. Killick made narrow vertical opening in the capsule by dissection. Marked improvement in vision resulted.

The method described is advanced as rational, simple, and without great danger. It causes no disfigurement and can be done in a reasonable length of time. STEWART A. BENTON, M.D.

Jones, C. P. I. Keratitis Due to Focal Infection. *Am J Ophth* 19 3, 35 440

This article is the report of a very interesting case of interstitial keratitis which had been vigorously treated with all the remedies for months. There had been no improvement and the other eye had become affected. The condition progressed to complete opacification of the cornea and total blindness. The infection was the tonsils and the roots of pine teeth. Very soon after these foci were removed the patient began to see and within eight months vision had increased to 20/20 in each eye. THOMAS D. ALLEN, M.D.

Forster, A. L. A Review of Keratoplastic Surgery and Some Experiments in Keratoplasty. *Am J Ophth* 9 5, 100

After reviewing the attempts at keratoplasty made during the last hundred years and writing the future, the fact that tissue cannot be transplanted from one species to another. Forster reports the result of operations performed on six calves.

An equilateral triangle of 7 to 8 mm. has been outlined on the cornea, the entire cornea is cut out, placed in sterile oil and then replaced and sutured with its right transposed. The sutures are

sterilized in oil. The lids are not sutured but remained closed for from one to three days and half opened for a week longer. In five cases the cornea healed in the same plane and was only slightly hazy. In one case it was opaque and staphylococci. Fungus details could be made out in all but one case. VIRGIN WATKINS, M.D.

11. T. M. Primary Ring Sarcoma of the Iris.
Am J Ophth 9 3, 35 345

Li reports a case of ring sarcoma of the iris with impaired vision, increased tension, and contracted fields, bow and on the nasal side. A short time before he was examined by the author the patient had noted blurring of vision and on several occasions the eye had bled. There was no complaint of pain. Ten years previously a piece of steel had been removed from the eye. Microscopic examination showed ring sarcoma of the iris with tension in the anterior portion of the ciliary body and round the entire circumference of the filtration angle. The optic nerve showed deep glaucomatous cupping with callosal trophic. VIRGIN WATKINS, M.D.

Hughes, W. F. Cataract Extraction and Complications. *J Indiana State M Ass* 9 3, 275, 79

In selecting the method of treatment the operator must consider his own technical ability and experience, the nature of the cataract, and the characteristics of the patient. Among the points of importance are the corneal or sclero-corneal section, the iridectomy, and the treatment of the lens capsule. After cataract is made, the treatment of the lens capsule and cataract by Smith and his. The intra-capsular operation performed by Smith. The author believes is falling out of vogue in this country because of its many disastrous results.

With regard to the Barraquer operation, Hughes states that in selected cases and when the operator is experienced there is little if any danger though defect in the iris may be present in an mechanical instrument and hemorrhage in the anterior chamber acts as serious hindrance to the Barraquer technique. The complications include exophthalmos, hemorrhage, squeezing of the lids, and contraction of the ocular muscles. Squeezing can be controlled by the use of lid elevators, and contraction of the ocular muscles by the method of Lagardner or McKee. The report is of careful irrigation of the conjunctival sac before the operation is started. Other foci of infection in the teeth, the nose and the throat should be searched for and treated.

If Hughes quotes Staub regarding inflammation of the eye caused by resorption of the crystalline lens matter in an infant. Trauma to the iris is of little importance. The origin of the inflammation is to be sought in the chemical action of the remains of the crystalline lens. Staub there is cited as reason for the removal of traumatic cataracts to prevent iridocyclitis. Secondary operations are

necessitated chiefly by the extraction of unripe lenses, as these do not separate as completely from the capsule as ripe lenses.

A. GEORGE B. DYKMAN, M.D.

Pollack, W. B. I. The Treatment of Early Opacities in the Senile Lens, with Demonstration of Six Cases. *Clarke M J* 9 3 xvi, 3.

Nearly all ophthalmic surgeons have at times seen traumatic cataract partly absorbed. A certain number of cases of spontaneous absorption of senile cataract are also on record. These, however, are comparatively rare.

Experience has shown, especially in the last twenty years, that the alkali treatment of senile cataract is successful and that the results are not due to spontaneous absorption nor to the clearing of vitreous or fundus opacities. Early treatment is recommended before the vision falls below 6/ Potassium iodide, citrat, citrat and chloride are used as drops. THOMAS D. ALLY, M.D.

Young, G. On Macular Perception in Advanced Cataract. *Brit J Ophth* 9 3, vii, 67.

In this article Young presents a case of high myopia with extensive choroiditis to demonstrate his method of ascertaining macular perception in advanced cataract. His outfit consists of four disks which fit the trial frame. The first disk to be used is cross thread and serves merely to center the trial frame. The others have one, two and three pinholes, respectively. In the last two mentioned the holes are the circumference of circle with diameter of 3 mm. With the one hole disk in place the patient is brought very close to the frosted globe in a dark room and requested to look for a spot of light. The other disks are then inserted, and if the patient sees two or three spots, macular perception is considered good. VERNON WESTCOTT, M.D.

Pitt, G. N. Shaw, H. B. Moore, R. F. Bardsley P., Adams, P. and Others. Discussion on the Significance of the Vascular and Other Changes in the Retina in Arteriosclerosis and Renal Disease. *Proc Roy Soc Med Lond* 9 3 xvi, Sect Med & Ophth.

Pitt stated that this was a subject which interested both the physician and the ophthalmologist. He hoped that the discussion would make clear the relation between the amount of blood urea and the development of the retinal changes, and the relation of the retinal changes to arterial pressure and arteriosclerosis.

SHAW reported that in a large series of cases in which the heart, as by hypertrophied the sign of hyperemia varies so greatly that in a few days it will fall from maximum to minimum not far from normal. Therefore it does not seem probable that it is due to such a stable condition as sclerosis of the middle coat of the vessels or proliferation of the cells of the intima. He attributes it to the presence in the blood of a variable amount of poison which causes changes

in the vessels. The silver wire appearance of the retinal vessels, he stated, is due to thickening of the middle coat, while the irregularity of the lumen is due to the thickening of the intima. He compared the retinal hemorrhage to the petechiae of infective disorders. He stressed the fact that persons with renal retinitis live only a few years while those with arteriosclerosis live a great number of years, and the changes in arteriosclerosis are slow while those of renal origin are more acute. He cited eclampsia as demonstrating that changes in the retina are due to disordered blood states rather than changes in the kidney or retinal vessels.

MOORE endeavored to establish the three following propositions:

The ophthalmological appearances of arteriosclerotic retinitis are distinctive.

The retinal exudates are the result of local vascular disease.

In the length of life and the manner of death there is a sharp contrast between cases of renal and arteriosclerotic retinitis.

BARDSLEY stated that he had long attributed retinitis and sclerosis to toxemia. If the ophthalmoscope shows advanced sclerosis, then gross retinitis and this is associated with albuminuria. Termination of life may be forecast months or weeks. The sclerosis is the index of the chronicity of the intoxication.

ADAMS stated that in a study of 150 cases of retinal disease associated with arteriosclerosis he found that the patients lived to an advanced age unless albumin was present in the urine. The older the patient at the time of the onset of the eye symptoms the better the prognosis.

ELLEN reported that he was making a study of renal function in all cases of retinitis. Two facts so far determined are: (1) the constancy of high blood pressure in these cases, and (2) the possibility of dividing them into two groups, those with and those without gross disturbance of kidney function. In cases with impairment of kidney function uremia usually follows in short time. Patients without impairment of the kidney live longer but usually die of vascular disease.

HAWTHORNE objected to the nomenclature because the terms toxic, renal, and arteriosclerotic retinitis are based on unproved hypotheses.

GASKELL pointed out that one disease involved the kidney and the other the vascular system.

CLARK stated that high blood pressure is one of the symptoms of hemorrhagic retinitis and suggested that in cases of hemorrhage or exudate or both in only one eye the tension of both eyes be determined.

DAVIES reported that of fifteen cases of popliteal aneurysm, marked arteriosclerosis. In four cases the signs of arteriosclerosis were slight, and in two the arteries were normal. Only one patient had hemorrhagic retinitis.

Pitt pointed out that while arteriosclerosis and cerebral hemorrhage may co-exist, they are separate entities. A small retinal hemorrhage is more apt to

infected thrombosis with extravasation than a rupture. Pitt has his prognosis on the blood urea and the kidney of course.

Fitzing reported three cases which he divided into two groups, those which he called arterio-sclerotic and those he designated as renal. In the renal group he placed those with a definite history of acute nephritis the persistent presence of the urine of large amounts of protein, and all marked anemia. The average age of these patients was 43 years. All of them had bilateral retinitis of the arterio-sclerotic group the average age was 63 years. The symptoms at both a unilateral retinitis.

Fitzing stated that if we accept the toxic origin of the retinal changes the retina should be found hardened in the arterio-sclerotic cases while in the renal cases the reverse would be true.

Hanz and drew attention to the fact that phos is an essential element in advanced cases of renal disease especially that complicated by ocular disease.

ALAN WESTCOTT M.D.

Ruchman L. Monocular Optic Neuritis. *Proc. J. Ophth.* 9:1 479

Ruchman reports four cases of acute monocular optic neuritis in young people. All were those of healthy women under middle age with no other symptoms but at a cause for the papillary edema except the pressure of the eye. Light perception was abolished in two of the eyes and doubtful in the others. There was no involvement of the ocular muscles and no exophthalmos. The treatment consisted in rest in bed in a dark room. Blistering of the temple and the instillation of dilute acetate of lead and iodide of potash ointment. The vision improved in every last case.

ALAN WESTCOTT M.D.

Vernon H. The Causes of Tumor of the Optic Nerve. *Proc. J. Ophth.* 9:13 309

Because of its rarity Vern reports two cases of tumor of the optic nerve.

Case 1 was that of a boy 23 years old. For 15 years the mother had noticed that the left eye was growing larger. The right eye was normal. The left was proptosed and disfigured objects only as shadows. The pupil and tension were normal and movement in all directions was good. The left disk was pale. There was no cup or swelling. While choroidal vessels were present in both eyes, those in the left were more prominent and several passed to the disk and there disappeared.

The external canthus was dilated. The external rectus was severed between sutures, and the eyeball drawn forward. The orbit was found filled with an elastic mass, but a small portion of the nerve was uninvolved behind the globe. The mass was removed by blunt dissection and the nerve cut near the eyeball. The internal rectus was sutured and the orbit drained. The lids were then sutured.

Case 2 was so great that the lids were cut and a keratin developed which left an apron. The power of the levator palpebrae was lost, the eye was abducted, and the iris and optic nerve were atrophied. The anterior portion of the optic nerve was withdrawn into a sac. The optic nerve was normal half way back and then turned out. The new formation was composed of nucleated cells with fibrils in a network structure. A diagnosis of gliomatosis was made.

Case 3 was that of a woman 30 years old. The right eye had been blind for many years but had been prominent for only three weeks. Examinations revealed moderate proptosis, slight limitation of movement, a slight rhegmatous retinal detachment and no light perception.

Excision of the globe was begun but only partial exenteration was done because a mass was felt in the orbit. About the optic nerve a hard irregular mass was found. There was complete absence of the medullary sheath. The fibrous tissue of the lamina cribrosa was increased. A diagnosis of endothelioma was made.

ALAN WESTCOTT M.D.

EAR

Pekelman, A. G. and Kraus F. W. The Effect of Pressure Changes in the External Auditory Canal on the Acuity of Hearing. *Ann. Otol. Rhinol. & Laryngol.* 9:3 315

Up to the present time no satisfactory method has been devised for testing the acuity of hearing in any animal except man himself. Experimental work has been limited. The Weber phonometer is the most satisfactory type of physical apparatus for the detection of sound.

The problem now for consideration is this: what are (1) the optimum air pressure in the external auditory canal for acuity of hearing; (2) the quantitative effect on acuity of hearing of increases and decreases in the air pressure in the external auditory canal.

Three tests were made and the third test was repeated by using an old type of telephone receiver instead of the phonometer. A vacuum tube oscillator was employed for the generation of electrical current of the desired frequency and the phonometer for the transformation of the electrical energy into sound energy.

The factors such as the following conclusions: (1) normal conditions the human middle ear is probably under slight negative pressure.

A negative pressure of 3 cm. of water in the ear of the external auditory canal increases the acuity of hearing by a factor of three.

A negative pressure of about 1 cm. of water appears to improve the transmission of sound through the middle ear probably by decreasing the tension of the drum membrane (increasing the tension of the connective tissue attachment of the drum membrane to the malleus, and balancing the air pressure on the two sides of the membrane).

The more or less constant negative pressure reading seems to suggest that the tube auditoria does not open to balance the pressure on the two sides of the membrane as is commonly assumed.

The anastomosis in the curve of hearing under these conditions seems to indicate that steps in the intensity of ratio of 5 or even perhaps 10, are sufficiently accurate for all usual purposes in determining the curve of minimum audibility.

JAMES C. BRADWELL, M.D.

Shambaugh, G. E. The Structure and Function of the Crista Ampullaris. *Ann Otol Rhinol & Laryngol* 9:3 XXXI, 443.

In the author's opinion conclusions drawn from models are of very limited value as it is impossible to construct models having even the remotest resemblance to the delicate complicated structure in the membranous labyrinth. Neither are experiments based on the results of operation on parts of the internal ear of lower animals of much assistance in the attempt to analyze the normal reactions of the end organs as operation is impossible without causing the escape of the labyrinth fluids. Reliance for an explanation of the reactions in the labyrinth resulting in stimulation of its end organs must be placed chiefly on investigations made on the human being.

The normal stimulation of the crista is the result of endolymph movements against the sides of the cupola. In the author's opinion this motion of the endolymph is the result of the to-and-fro movements imparted to the fluid by the pulsation in the labyrinth artery. Clinical evidence indicates that this is the correct explanation of the origin of labyrinthine tones.

Shambaugh discusses the fistula phenomena, the caloric experiment and the phenomena of fatigue in some detail.

JAMES C. BRADWELL, M.D.

Dennis, F. L. The Practical Diagnostic Value of Tests of the Vestibular Mechanism. *Ann Otol Rhinol & Laryngol* 9:3, XXXI, 60.

The author emphasizes the need for a uniform technique in conducting the examinations and for uniform nomenclature in recording the findings. One observer douches with water at 63 degrees F. while others use water at 65 or 55 degrees F. A faulty position of the head in turning or douching may cause apparent perversion or inversion of the nystagmus.

It is important that the examinations be made by one trained in otology and worked out with a neurologist who is familiar with the findings of vestibular tests.

Intracranial lesions are difficult to localize on account of the variable response to pressure. Pressure affects remote parts of the brain as well as near areas and good judgment is required to decide when a given finding is due to distant or near-by pressure.

The loss of responses from the vertical canals in cases in which there is probably no organic central

lesion may be explained by the selective action of certain toxins for certain parts of the nervous pathways: the extinction of others. We know that, even in cases of central lesion, distant pressure can ablate the responses from the verticals and not so affect those from the horizontals. It is a fact also that after the turning of normal persons vertical nystagmus is much shorter in duration than horizontal nystagmus.

Anomalies of past-pointing after stimulation are frequently encountered. This may be due to the fact that past-pointing is a voluntary act. The findings of past-pointing are often disregarded unless confirmed by the findings of vestibular tests.

The author reports ten interesting cases in detail.

JAMES C. BRADWELL, M.D.

Mackenzie, G. W. Some Remarks on Nystagmus. *Ann Otol Rhinol & Laryngol* 9:3 XXXI, 47.

Nystagmus is of two types, undulatory (oscillatory) and rhythmic. In undulatory nystagmus, which is due to impaired vision, the to and fro movements occur with equal rapidity. The visual defect is usually central and occurs early in life. In rhythmic nystagmus, which is due to paralysis of the external ocular muscles, irritative or destructive processes

the eighth nerve or the middle ear or lesions of the cerebellum, the to-and-fro movements are unequal in rapidity.

Vernon W. WRIGHT, M.D.

Borer, H. E. Chronic Suppurative Otitis Media. *Ann Otol Rhinol & Laryngol* 9:3 XXXI, 77.

Borer studied the results of treatment in 190 cases of chronic suppurative otitis media to determine whether or not local treatment of the ear had any permanent beneficial effect. These cases were classified into four types. Cases of Type 1 were those in which the discharge was thin and mucoid, and arose solely from the eustachian tube. As a rule the perforation is of considerable size and situated in the antero-inferior quadrant, but in some cases the entire tympanic membrane may be absent because of previous active suppurative process of the middle ear which has since healed.

Cases of Type 2 were those in which the suppurative process was confined to the hypotympanum and mesotympanum. The perforation of the tympanic membrane may be large or small and situated anywhere in the pars tensa. The mucous membrane lining the tympanic cavity is often markedly thickened and granular in appearance and secretes

thick mucoid fluid containing many leucocytes. Areas of necrosis of the bony walls may be present, and occasionally there may be necrosis of the lower portion of the ossicle.

Cases of Type 3 were those in which the suppurative process and necrosis involved the attic as well as the lower portions of the tympanum. Very often the perforation of the tympanic membrane is in Shrapnell's membrane, and most of the suppurative process is concealed. Generally, however, the attic seems to be involved secondarily so that

Shrapnell membrane is intact. A probe introduced from below the level of the anterior and posterior folds will find free access into the attic and often will dislodge masses of thickened discharge. Fragments of necrotic ossicles, and portions of cholesteatoma which has collected in this region.

Cases of Type 4 are those in which there is definite suppuration of the antrum and the adjacent mastoid cells as well as suppuration and necrosis of the lower portions of the tympanum. This is often demonstrated by fistulous tracts from the posterior canal all leading into the mastoid cells, the walls of which are often necrotic or have been eroded by cholesteatoma. Occasionally the aditus ad antrum has been enlarged by a cholesteatoma. The effect of a radical mastoid operation is produced. A radical mastoid operation indicated in all cases of this type. Before operation, preparatory treatment should be given to clear the middle ear and to pyrexias as much as possible in order that the postoperative care may be shortened. In any of the types mentioned an open tube contributory to the discharge may be present.

The method of treatment used in the series of cases reviewed essentially combination of the antiseptic, alcohol and caustic methods described by Politzer and allied empirically by the thoracic dry method in contradistinction to the wet method in which irrigation is used. All treatment was done in the office, the patient not being permitted to use any treatment at home. In this way better observations could be made of the condition and its control.

This study revealed the fact that 74 per cent of the patients remained in good condition following treatment. The duration of treatment averaged about four weeks. A surprising fact is that 7 per cent and 4 often responded most readily. It has been customary in the Mayo Clinic to give each case with chronic suppurative otitis media a test of treatment before the radical mastoid operation is advised.

The conditions which seemed to be factors in the recurrence of the discharge from the ear were open tube, head colds, functioning membrane on the promontory which had not been entirely destroyed and converted into scar tissue, the disease process and the existence of quiescent abscesses in the ear. In 10 per cent of the cases in which the ears did not remain dry after treatment there was a small amount of moisture due to a functioning membrane on the promontory or discharge from the tube. The duration of the disease process before the patient presented themselves to the Clinic was about fourteen years, but no age appeared to be an important factor. Care not to produce undue back pressure in the nasopharynx and ears has to be when blowing the nose. It is found to be an important factor in the control of the condition in the ears as 7 per cent of the patients report that they felt it had very decided beneficial effect.

From the following conclusions from this study:

About 50 per cent of the patients with longstanding chronic suppurative otitis media who have responded satisfactorily to treatment remain in good condition for a period of at least one to two and one-half years.

Sex, age, and constancy of discharge have no apparent effect on the permanency of the cure.

Long duration of the discharge is not necessarily an unfavorable factor.

The patency of the eustachian tube and the presence of functioning membrane in the middle ear must be taken into consideration with the type of the disease when prognosis as to the permanency of cure is made.

Local treatment must be well directed and continued as long as necessary.

Care in the blowing of the nose is an important factor in keeping the ear dry in at least 30 per cent of the cases.

Most patients whose ears were cured and remained dry could have been subjected to mastoid operation if a conservative view had not been taken and if local treatment had not been continued as long as necessary.

It is reasonably safe to assume that suppurative ear conditions which have responded to treatment will do so again.

Discharge from the tube after the suppurative process has been controlled may be considered of minor importance so far as true danger is concerned.

Thomsen, on Golding, G. The Treatment of Otitis Media with Tuberculin. *A. Otol. Rhinol. Laryngol.* 9:3, 1920, 40.

In the author's opinion, a large part of the skepticism regarding the value of tuberculin is due to the fact that many men do not know what test is indicated in given cases and do not understand how to use tuberculin therapeutically.

Many persons thought an ear process is resistant to tuberculin because of the delicacy of the test and because most persons have had tuberculous infection at some time. It is essential to know how to differentiate the active from the latent infection.

The author reviews the Mayo, on Parquet, on Janet, on Strickland, and on subcutaneous tests. The subcutaneous test is without doubt the most reliable but as the reaction is severe it is sometimes contra-indicated.

The history should be taken carefully as in every case of chronic otitis media and if there is reason to suspect previous tuberculous infection the patient should be thoroughly tested with tuberculin.

The author reports 6 cases of chronic otitis media which the use of tuberculin gave excellent results. He draws the following conclusions:

A patient with chronic suppurative ear should always be tested for tuberculous.

When patient has positive reaction to the proper tuberculin test he should be treated with

tuberculin, even though other bacteria are found in the ear discharge.

3. A patient reacting positively to tuberculin test should be impressed with the fact that the prognosis is good provided he takes treatments regularly.

4. A mastoid operation should be done only as a last resort.

JAMES C. BRANFELL, M.D.

Dench, E. B. The Radical Operation in Chronic Suppurative Otitis Media. A Consideration of the Technique, the Use of the Primary Skin Graft, and the Result of the Operation with Particular Reference to the Function of the Organ. *Laryngoscope* 9, 3, 1900, 34.

In the United States, and especially in New York, there seem to be many men who believe that the radical mastoid operation should be employed only in cases in which the middle ear lesion is threatening life and those in which the function of the organ has been so decreased by disease that any further danger to hearing is impossible.

There are various opinions as to the success of the procedure in obtaining a dry ear. In the author's opinion the chance of success in obtaining a dry ear and of preserving the function of hearing depends on the operator's technique.

The ear should be carefully examined with the speculum and with the X-ray. Ordinarily the incision should extend from the tip of the mastoid upward, following the line of the insertion of the auricle and $\frac{1}{2}$ in behind it. If the mastoid is large and pneumatic, it should begin below the tip and extend behind the ear far enough to permit excision of all the cells, but still rest upon firm bone.

If the mastoid is sclerotic, the incision should not extend below the tip, and the attachment of the sternomastoid muscle should be left undisturbed so that the planes of the neck will not be opened to infection. If the zygomatic cells are extensively involved, only the soft parts covering them should be incised; the temporal muscle then being elevated without cutting.

The facial ridge should be taken down as low as possible, and the floor of the canal should be lowered. The hypotympanic and the posterior space should be entirely obliterated and the eustachian tube thoroughly curetted. Anomalous positions of the facial ridge should be borne in mind.

After the cavity has been formed the most important point is the enlargement of the external auditory meatus. The cavity must be aerated properly if it is to remain dry. This is impossible if the cavity is large and the meatus small.

The author advocates the systematic use of the primary skin graft. He employs it in every case other than those operated on during an acute exacerbation of the chronic inflammation. He uses it irrespective of exposure of the sinus or dura unless the sinus or dura has been wounded. If the labyrinth has been opened the use of primary graft is contra-indicated.

A large graft completely lining the cavity should be employed. The air beneath the graft should be removed by pipette as recommended by Ballance and the epithelial insert held in place by pledgets of sterile cotton. The graft should be forced well down into the mouth of the eustachian tube, and lapped well over the anterior wall of the canal. After the bony cavity has been healed, the redundant portion of the graft should be bent forward and the auricle replaced. The redundant portion should then be drawn through the enlarged meatus and held in place by a packing of sterile gauze.

The author reports the results obtained in a series of 480 cases made up of two groups: () cases operated upon in private practice, and () 368 cases operated upon in hospital practice.

The hearing was made one in only a very few cases. The author has determined that if a patient hears a moderate whisper at 20 ft. and also has no evidence of disease of the perceptive apparatus, the hearing may be slightly impaired after the operation. If he hears the whisper at a distance of only 4 ft. or less and there is no evidence of disease of the perceptive apparatus, the hearing will probably be improved.

In the entire series of 480 cases there were fourteen deaths. In the private cases there were three deaths, none of which were due to the operation. Ninety-five of the private cases were cured; that is, the ear remained dry. In seven there was less discharge, and in three there was no improvement. The result in four is unknown.

The hearing was improved in sixty-five of the private cases, remained the same in twenty-seven, and was reported worse in eight. The result in nine is unknown.

Of the 368 hospital cases, the ear is dry in 214. The result in 243 is unknown. In twelve of the cases the hearing was improved, and in one it remained the same. The result in 343 cases is unknown.

These statistics show that the operation is as devoid of danger as if any major surgical procedure can be. Of the complications, facial paralysis is the most to be feared. This occurred in five of the private cases but cleared up entirely. Its incidence in the 368 hospital cases is unknown but it is as low and all of the patients recovered.

The after-care consists in removal of the epithelial cast followed by the application of 50 per cent alcohol to the wall of the cavity. The ear should be examined once or twice a year. If a large number of the cases the hearing can be improved by applying disk of cotton saturated with sterile vasoline over the region of the stapes.

W. B. STARR, M.D.

NOSE

Fenton, R. A. Sinusitis from S. hemolytic. *Ann. Otol. Rhinol. & Laryng.* 9, 3, 1900, 376.

Water draws out the saline elements of cells by osmosis, causing edema, acidosis, loss of ciliary activity and eventually cell death. The specific

protective substance of the sinus secretion is washed away or inhibited by the ordema and chemical degeneration of the secretory cells.

The danger of contamination by other swimmers is decreased by the coolness of the water its constant agitation, and the high dilution of the contamination. The assumption that most persons succumbing to sinusitis after swimming are poisoned by their own nasopharyngeal bacteria which are forced into these cavities under conditions favoring their rapid growth and the retention of secretions has considerable justification.

Direct trauma to orbits and mucosal linings and bony dehiscence may be caused by the forcible urush of water especially chlorinated water and the forcible outrush of air bubbles.

The prevention of sinusitis due to swimming is largely a matter of warning persons with latent nasal infection chronic colds, and similar conditions to keep out of the water. Persons with a high narrow nose, an occlusal deflection or an impinging middle turbinate are particularly susceptible to infection. Persons with large sinuses and small ostia should be forbidden to do deep diving. As prophylactic measure heavy paraffin oil may be dropped in the nose. The author reports four typical cases of infection following swimming.

JAMES C. RASSELL, M.D.

Dean, L. W. Complications of Paranasal Sinus Disease in Infants and Young Children. *Ann. Otol. Rhinol. & Laryngol.* 1913, XXII, 133.

Dean emphasizes the importance of early recognition of paranasal sinus disease in children as the complications are often very severe and may lead to permanent deformities.

Many cases are described some in which the postmortem findings fully confirmed the diagnosis made during life.

Arthritis, a frequent and serious complication, clears up if the sinus condition is recognized early and treated. Paranasal sinus disease may cause systemic infection as early as the age of 3 years in infants and young children it is sometimes difficult to cure permanently.

Bronchitis is a very common result of the disease in infants and young children. In the case of every child with bronchitis, even if adenoids are present, paranasal sinus disease should be suspected and the paranasal sinuses examined.

The disease may be the source also of pneumonia, and frequently there is an interdependence between paranasal sinus disease in young children and asthma.

One of the characteristics of sinus disease in young children is headache. Usually this is frontal and is tributed by the parents to eye strain. In some cases the headache may be orbital because of involvement of the nasal ganglion. Sometimes the frontal pain is very excruciating. A beginning tuberculous meningitis will cause the same type of pain as an acute frontal empyema. Other

symptoms of sinus disease are nasal stoppage and a feeling of fullness in the head.

Complications such as recurrent fever periodic vomiting, pyelitis, cervical adenitis, brain abscess, ocular involvement, etc., are described in their relationship to paranasal sinus disease.

One of the most common and important complications which must not be overlooked is gastrointestinal disturbance. This is usually so severe that it is thought to be the primary trouble. In the author's opinion it is questionable whether the disturbance is the result of the swallowing of the nasal discharge or due to the elimination of bacterial products through the gastro intestinal tract.

A. R. HOLCOMB, M.D.

Harter, J. H.: Practical Considerations of Ethmoido-sphenoidal Sinusitis. *Laryngoscope*, 1912, XXII, 47.

Four important points in the prophylaxis of ethmoido-sphenoidal sinusitis are (1) the scientific treatment of acute cases, (2) the avoidance of forced blowing of the nose, (3) the avoidance of nasal douching, except in cases of catarrh, and (4) the removal of any intranasal obstruction to ventilation and drainage.

The author gives the classification of sinus diseases and the most important points in the diagnosis. In the diagnosis of chronic ethmoido-sphenoidal sinusitis the points of importance are (1) the visible evidence presented by the nasal cavities, the pharynx and the epipharynx, (2) the roentgenogram, which shows the size and shape of the cells, and (3) the characteristic pain.

The pathology is described in some detail. Conservative treatment is advocated for acute catarrhal and acute suppurative cases. For chronic catarrhal cases with only small amount of discharge palliative measures are recommended.

A. R. HOLCOMB, M.D.

Boebinger, M. B. Nasal or Sphenopalatine Neuresthesia. *Texas State J. M.* 1913, XIX, 35.

Boebinger introduces his discussion of the sphenopalatine neuresthesia with review of the anatomy to show the relationship between the sphenopalatine ganglion and the various accessory sinuses of the nose.

The neurons is of 4 types (1) the neuritic, consisting of intense, excruciating pain radiating to any or all parts supplied by the branches of the ganglion, and (2) the sympathetic, in which there are paroxysms of sweating and watery discharge from the nose suggesting hay-fever but which is so way does it pollen.

With regard to the differential diagnosis the following points are mentioned.

Communication of the sphenopalatine ganglion stops the pain of a lesion in the ganglion.

Communication of the sphenopalatine ganglion does not in any degree stop the pain caused by the

more central lesion of the nerve trunks, maxillary and vidian, secondary to sphenoidal inflammation.

3 The intrasphenoidal application of pain reducing remedies, such as cocaine will stop the pain that is, local anesthetic applied centrally to the ganglion will be effective.

The treatment consists in injecting into the ganglion from 5 to 15 minims of 5 per cent phenol in 95 per cent alcohol or swabbing the area with an aqueous solution of 2, 10, 25, 50, and 75 per cent silver nitrate after coagulation.

For the injection, a 5-cm Luer syringe with a 1-mm 3/64 in needle with cross bar is used. In some cases the injection must be repeated. The best results are obtained in the cases of sympathetic nervous. When sinus disease is present the author uses the suction apparatus.

The complications, which are not numerous or severe include the following:

1 Paralysis of the abducens after the injection.

Swelling and ecchymosis appearing in the cellular tissue beneath the lower lid and closing the eye after the injection.

3 Secondary hemorrhage from the nose, which often makes packing necessary.

4 The entrance of the alcohol phenol solution into the pharynx or the larynx.

The article is concluded with five case reports.

O M ROTT M D

MOUTH

Blair V P and Moskowitz, M. J. Cancer of the Mouth and Jaw. *Internat J Otolaryngol Otol Surg & Radiography* 923, ix, 8.

The authors believe that dentists should recognize the importance of thoroughly observing all the mucous membrane exposed in the course of an examination of the teeth in order that timely advice may be given in cases of precancerous conditions. The relation of syphilis to the etiology and diagnosis of malignant disease of the mouth is of great importance. The treatment of early cancerous or precancerous lesions about the mouth with irritants is worse than failure to diagnose the condition.

A wart or warty growth forming at a point already the seat of condition predisposing to cancer should be regarded as an actual precancerous condition. Leukoplakia is the most common local precedent of cancer of the mouth. The conditions considered by Butlin as the most typical and frequent forms of cancer of the tongue in its early stages are mentioned. There are certain characteristics of cancer which it is essential to remember: (1) the chronicity of the disease, (2) the continuous growth, (3) induration, (4) ulceration, (5) pain, and (6) involvement of the lymph nodes. In the presence of squamous-cell epithelioma of the mouth the lymph nodes should be considered as already infiltrated.

E C ROSENBERG, M D

Heldrich, L. The Surgery of Carcinoma of the Mucous Lining of the Mouth (Beiträge zur Chirurgie der Mundschleimhautcarcinome). *Beit H Chir* 1933, cxviii, 3.

This careful compilation covering a period of thirty years and 266 cases proves that carcinoma of the mucous membrane of the mouth has the most unfavorable prognosis of all cancers. Only 19 per cent of the cases were permanently cured, and cancer of the mouth is fifth in frequency of all cancers. On the basis of his cases and those in the literature to date the author discusses the relationship of age and sex to the condition, and its origin, symptoms, duration, and localization.

Involvement of the neighboring tissues is of great importance. The migration of cancer particles into the internal organs is very rare in cases of cancer of the mouth. An early diagnosis is essential; the importance of biopsy of every suspicious tumor or ulcer of the mouth is particularly emphasized. Early diagnosis should be followed by early treatment. At the Kuettnier clinic, however the limits of operability in cases of oral cancer are very broad. For the prevention of cancer all injuries, tears, and fissures of the mucous membrane, and particularly ulcers, must be treated correctly—never with caustics—and under certain circumstances a specimen of tissue should be excised. If biopsy shows the presence of cancer immediate surgical treatment is imperative.

The rule of the clinic is: small cancers, large operations. Mere excision of the tumor alone is not sufficient. In every case total removal of the glands is necessary. Only when this is done can one speak of radical operation for carcinoma of the mouth. Preoperative and postoperative treatment is of great importance. The operation should be performed under local anesthesia. The details of the operative technique must depend upon the situation of the tumor. The Sedillot-Kocher median splitting of the jaw and the lateral sawing of the lower jaw by the Langenbeck-Bergmann method have been found to give good exposure of the mouth and easy approach to the lesion. The cautery is not used in the removal of the growth.

Of the patients whose cases are reviewed 39 per cent died following the operation and 86 per cent were discharged from the clinic as cured. 1 case of inoperable cancer the pain was decreased by excision of the ulcerated cancerous focus supplemented by the administration of analgesics. It was not influenced by bilateral ligation of the external carotid the injection of diphtheria or erysipelas sera or roentgen treatment. In spite of faultless technique, the latter was sometimes followed by very rapid growth of the tumor.

The average duration of life after radical operation was twenty-seven and four tenths months in cases of tongue cancer, twenty-six and two-tenths months in cases of cancer of the mouth, ten and two-tenths months in cases of cancer of the pharyngeal tonsil, nineteen and eight tenths months in cases of cancer

of the buccal mucous membrane and fifty-six and two-tenths months in cases of cancer of the uvula.

STROMAN (2)

Morgan, E. A. Ulcerative Stomatitis and Its Treatment by the Intravenous Injection of Arsenic. *Am J Dis Child* 93 xxx 354

The author states that the terms Vincent's angina, trench mouth, and suppurative gingivitis refer to an acute infection of the gums by spirilla and fusiform bacillus which cause local signs such as spongy bleeding gums and necrotic areas in the immediate vicinity of the teeth, and general symptoms such as malaise, pyrexia, and anorexia. The term ulcerative stomatitis is frequently applied to Vincent's infection and described as such. The ulcers in ulcerative stomatitis are small and without the ragged necrotic appearance characteristic of Vincent's infection.

Lowered vitality and oral uncleanness are the chief predisposing causes of suppurative gingivitis. The exciting cause is an infection of the gums by the Vincent organism.

The two principal modes of transmission are kissing and the use of food utensils which have been carefully asked.

The onset of the condition is usually sudden. There is general malaise with slight elevation of temperature. The breath is very offensive. The gums are deep red and bleed very readily. If the condition has been present for four or five days, areas of necrosis are often seen along the gum margin. Frequently the lymphatic glands below the jaw are enlarged.

The local application of Bowman's solution is very popular. The author has treated twenty-five cases by the intravenous administration of arsenic. The results have been very satisfactory and in some cases spectacular. The average length of time required for effect was five and one half days. In every case the cure appeared to be permanent.

JAMES C. BRAHWEILL, M.D.

Kolmer J. A. Arsphenamine Treatment of Spirochetetic Gingivitis. *Am J Clin Med* 93 xxx 243

In spirochetetic gingivitis, commonly known as pyorrhea alveolaris or Riggs' disease, the local application of 1 per cent solution of arsphenamine has proved very efficacious. Neo-arsphenamine should be used in 1 per cent solution. The arsphenamine solution should be the usual alkaline solution. The neo-arsphenamine solutions should be prepared in distilled water.

The drug is best applied by means of syringe. One cubic centimeter of either solution is sufficient. Usually six to ten daily treatments suffice. If bacterial activity is suspected in addition, iodine, mercuriophen, or silver solutions should be used in conjunction with the arsenical preparations. For treating these double infections, Kolmer recom-

mends mixture of equal parts of 1 per cent solution of arsphenamine and 1:1000 solution of mercuriophen.

O. M. ROTT, M.D.

New G. B. The Use of the Delayed Flap in Secondary Operations on the Palate and Antrum. *Minnesota Med* 93 vi, 4

The greater number of patients with cleft palate who are operated on at the proper age obtain complete closure and good functional results. Occasionally, however, partial failures occur even under the most favorable conditions. Many of the larger postoperative openings are due to the operator's lack of knowledge of the principles of cleft palate surgery. Such openings are usually in the hard palate or at the junction of the hard and soft palates and are sometimes closed with difficulty depending on their size and location and the amount of scarring present. It is in these post-operative cases and those of wide cleft palate (many of them double) in which doubt arises as to the best procedure to follow that the author has found the use of the delayed flap very satisfactory.

It is best to wait at least three months after the first operation before attempting a second as operations performed immediately after the primary operation usually result in failure. For the closure of postoperative openings of the palate tissue may be obtained from the palate itself or from other parts such as the cheek or the neck. In obtaining tissue from the palate three types of flaps may be used. In cases of small openings with little scarring the mucoperiosteum around the opening may be freed laterally and the opening closed by means of lateral incisions and mattress sutures. The objection to this method is that the scarring around the opening is sometimes so extensive and the tissue so inelastic that the mesial margins are brought together under slight tension and sloughing sometimes results. In other cases closure may be obtained by making flap with pedicle along the margin of the postoperative opening, turning it

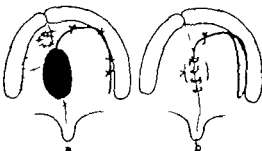


Fig. The closure of postoperative opening in palate by means of delayed flap with posterior pedicle. a. The flap has been elevated and sutured back in place, and at the same time the opposite side of the palate is freed. b. The flap is again elevated and the mesial margins are paired and then sutured together as shown in b.

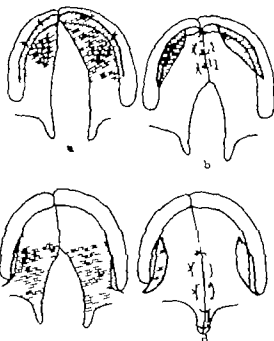


Fig. The closure of a postoperative palate in which the opening is too wide and there is too much scarring for the usual Langenbeck operation. A. Flaps are elevated from either side of the anterior part of the palate and sutured back in place. The spongiotomies of the palate is not freed at this time. B. The closure of the anterior part of the palate is completed one week later. The first stage of the second operation three months later. The posterior part of the palate and the soft palate is freed by lateral incisions, and at the end of a week the mesial margins of the flaps are pared and the palate is closed in the usual manner.

completely over hinge like and suturing it underneath the freed margin of the opposite side of the opening as described by Lane. The scarred margins of the opening, however, make very poor tissue for pedicle especially when the flap is turned over on itself.

The Divis Colley method is similar to the Lane method. Flaps are obtained from each side of the palate. One has the pedicle along the mesial margin of the opening and is turned over hinge-like. The other is long and narrow with its pedicle posterior. The latter is sutured over the other flap with its mucous membrane toward the mouth.

The third method is the use of a pedicle flap with the pedicle posterior on the palate. Each is brought across in one stage operation with its mucous membrane surface toward the mouth.

The method which the author has found most successful in the closure of both large and small openings is the application of cleft palate surgery

of the principles employed in using the delayed flap in plastic surgery of the face and neck.

The flap is outlined on one side of the opening with the pedicle posterior and then elevated and placed back in its original bed. At the same time, the opposite side of the opening is elevated from its mesial margin and allowed to fall back. A suture or two may be employed to hold the anterior extremity of the flap in the correct position. At the end of a week the flap is again elevated and the mesial margin trimmed and sutured across the opening. The freshened and elevated margin of the opposite side. During the week of delay the blood supply to the flap is improved a great deal and the flap becomes thicker. In the second stage, minute areas of slough, if present, are trimmed off as the margins are freshened.

If the original opening is very large or the post-operative complete cleft palate is very wide with marked scarring, it may be necessary to effect the closure in two stages, in the first stage closing the anterior part of the palate by delayed flaps from each side without freeing the ponsurosis of the palate and three months later completing the closure by the two stage Langenbeck operation.

The same procedure is employed in closing post-operative openings in the antrum following osteomyelitis of the jaw the removal of malignant growths, or a Denker operation. The flap is elevated from the inside of the cheek with the pedicle high and then sutured back in place. At the same time the margins of the opening are freed. After a week, the flap is sutured in place around the opening. The pedicle may have to be cut in a week or ten days and replaced to the cheek, but this may not be necessary if the base is close to the opening.

The results of this method of closing post-operative openings in the palate and antrum have been much more satisfactory than those of any other method tried. Closure may be effected with the delayed flap in cases of cleft palate which were formerly better taken care of by means of plate and in cases in which the mucoperiosteum is very thin. While this method does not make all cases of cleft palate operable it has added to the operable group many which were not benefited by previous operative procedures.

THROAT

Carles, J. Rhinopharyngitides. Their Role in Contagion and the Development of Certain Infectious Diseases. (*Les rhinopharyngites leur rôle dans la contagion et le développement de quelques maladies infectieuses*) J. & Méd. de Bordeaux 9:3 1907.

The author reports three clinical cases illustrating the rôle played by inflammation of the rhinopharynx in the development of infectious diseases. The first was that of a 9-year old child with acute tonsillitis due to a coccus infection. Recovery was slow. After fifteen days sudden severe pain developed at the level of the upper epiphyses of both the base and the

lower end of the right femur. This yielded in twenty-four hours to hot fomentations. Five days later there was another attack of pain in these areas but it subsided again within few hours. Such attacks continued. One and one-half months after the onset of the trouble another attack was accompanied by sore throat. The sore throat yielded to gargle of hydrogen peroxide. The tonsil crypts were cleaned out and at the end of three weeks a tonsillectomy was done. The crypts were full of foul plugs.

The two other cases reported were cases of nephritis. One was acute and one chronic. Both were lighted up by attacks of tonsillitis. Other cases of pharyngeal infection with pulmonary complications are mentioned.

KILLGORE SEYM, M D

Peterson, E. W. *Septic Following Tonsillectomy*
Ann Surg 923, LXV, 760

Peterson reports the case of a child 4 years of age who was allowed to go home on the day following a tonsillectomy and adenoidectomy and that night developed a fever of 104 degrees F with swelling at the angle of the jaw on both sides of the neck. When examined, it had a temperature of 105 degrees F and was apathetic and decidedly septic in appearance. The general examination was negative except for the presence of dirty-looking membrane in the tonsillar spaces and a suppurative cervical adenitis just below the angle of the jaw on the right side. Incision and drainage of this abscess had no effect on the general condition. For the first ten days the temperature remained constantly high, ranging from 101 to 106 degrees F. It then became intermittent and ranged from 97 to almost 99 degrees F. There was more or less fever for forty-seven days.

While in the beginning the patient was apathetic and wished to be left undisturbed, he was later extremely hypersensitive, skful, and fretful. On several occasions he had a severe chill. He lost weight and strength gradually and showed moderate secondary anemia. Blood cultures are negative. When the sepsis reached subacute stage transfusion of 350 ccm of unmodified blood was given into the left external jugular vein by the syringe cannula method. This was followed by decided fall in the temperature and improvement in the appetite, strength, and in the general condition. After 46 days, however, the temperature began to rise again and a hard swelling developed in the left parotid region and gradually increased until the left eye was closed. Later fluctuation could be detected just above and in front of the left external auditory meatus. Incision into this mass revealed peritonsillitis of the mandible on the left side just below the articulation. Another transfusion was then given. Following drainage of the focus of infection and the blood transfusion the temperature dropped to normal and convalescence was rapid and complete.

OTTO M. ROTH, M D

Recher, H. L., and Lasserre, C. *Lymphosarcome of the Tonsil, the Thyroid and Both Testicles (Lymphosarcome de l'amygdale, du corps thyroïdial et des deux testicules)* *J de mèd de Bordeaux* 93, 207-54

In May 1921 a 9½ year old boy suffered an attack of angina. As a membrane appeared on the left tonsil, anti-diphtheritic serum was given. Ten days after recovery tumor the size of a pigeon egg as found in the left tonsil biopsy showed that it be small cell sarcoma. Ten weeks later three radium needles were applied for thirty hours. Ten days later the left testicle and cord became enlarged and hard. Five X-ray treatments were followed by subsidence of the tumor. Within another two weeks swelling of the thyroid developed.

On examination November 20 the child was found to be afebrile and in good condition except that his face was slightly swollen and congested. The left tonsil had almost completely disappeared and the pharynx was negative. The thyroid was enlarged and hard, but the overlying skin was not adherent. The boy had no pain and the thyroid mass moved on deglutition, giving no evidence of laryngeal or recurrent nerve pressure. The left testicle was hard and about the size of an egg. Where it was attached to the testis its cord, which was also much enlarged, simulated a lobulated tumor. Palpation seemed to reveal enlarged lymph nodes along the aorta. The right testicle showed beginning enlargement and the blood examination secondary anemia.

The condition progressed rapidly and was accompanied by attacks of suffocation. Death resulted November 29 in spite of tracheotomy. When the tracheotomy was done soft tumor infiltrated with blood was met before the trachea was reached. Tracheal rings could be identified and the tube could not be inserted. A piece of thyroid tissue removed for examination showed mitoses and diffuse infiltration of the tumor tissue which made its structure almost unrecognizable. The tumor was diagnosed as a lymphosarcoma.

KILLGORE SEYM, M D

Giddings, F. and Ehrlich, D. E. *An X-Ray Study in Intubation* *Laryngoscope* 31, 330-40

As there appears to be no record pertaining to the X-ray study of intubation the authors attempt to present graphically the various steps and scores of the masterpieces in the procedure. Mention is made, however, of the work of Skuriev who in 1905 presented the subject of visualization of the procedure of intubation in a series of illustrations made on the dissected cadaver.

Intubation like any other exact procedure requires practice. One must have tactile knowledge of and be familiar with the landmarks about the superior opening of the larynx and be able to insert the tube quickly but not hastily. Without hurry, the patient can be intubated and extubated within ten seconds.

The intubation set as originally devised by O. Dwyer is still used but with one or two modifi-

cannula. It consists of seven graduated tubes—namely 3, 3, 4, 5, 6-7, 8-9, 10—the numbers indicating the various sizes—an obturator to fit each tube, a mouth gag, an extubator and a small scale for measuring the size of the tube. The obturator fits into handle or introducer with a spring attachment to push the tube off the obturator. As the prongs at the end of the spring become easily bent and retard rather than accelerate the pushing off of the tube, it has been found better to remove the spring and release the tube from the obturator by means of the finger.

The tube consists of a cylindrical metal core surrounded by a hard rubber covering so molded that a swell at its mid portion accommodates the laryngeal configuration. At the upper part of the tube, on its posterior aspect, is a flange which holds the tube in place and prevents it from being pushed down the larynx. On the right side of the tube, with the pharynx posterior is a foramen through which passes a waxed string. The string acts as a safeguard to remove the tube if it accidentally finds its way into the esophagus. The reason for waxing the string is to lessen the possibility of its becoming entangled when it is removed after the tube has been properly placed.

A tube which cannot be coughed up has been devised for special cases. Although metal tubes have been used as substitutes for those covered with hard rubber, experience has shown that the latter are most suitable, especially when the tube must be retained for any length of time.

The author calls attention to the anatomy of the larynx with regard to intubation and describes the technique of intubation and extubation in detail.

One of the rare complications is the slipping of the tube into the trachea and then into the bronchus. This may be due to trauma as the attempt to extubate too small tube, or to a relaxed condition of the larynx. More frequently the tube may be coughed up and pass into the nasopharynx. Its position may be detected by digital examination, the lower end of the tube being felt in the oropharynx. Still more frequently the tube is recovered from the bed or floor or is discovered in the esophagus or swallowed and passed with the stool on the third or fourth day.

The illustrations should be referred to by those who wish to visualize the many suggestions offered by the authors.

A. R. HARRISON, M.D.

Wills, A. One Hundred Cases of Laryngeal Growths Removed by Indirect Laryngoscopy. *Internat. J. S. & G.* 2, XXXV, 444.

Wills urges the removal of laryngeal growths by the indirect method and reports on cases treated in this manner. The advantage claimed for the method is that it removes the growth with very little discomfort to the patient and without injury to the larynx or any other risk. In fact, the patient is perfectly well as soon as the operation is com-

pleted. Moreover the operation can be performed in the office.

Several days previously small doses of potassium bromide should be administered to relieve mental strain, and half an hour before the operation 1/100 gr. of atropin should be injected subcutaneously to lessen secretion. The operation is facilitated also if a suture is inserted through the epiglottis by means of a Horsford needle and then gently pulled forward.

The pharynx and larynx should be sprayed with a 10 per cent freshly prepared solution of cocaine and two minutes before the operation the vocal cords and the growth should be sprayed with a 5 per cent solution of cocaine and olive oil.

MacKenzie's forceps are of value in most cases, especially if the growth is situated at the posterior end of the larynx or on the upper surface of the cords. Grant's forceps are specially adapted for tumors on the edge of the cords protruding into the lumen of the larynx. Whistler's forceps are serviceable for the removal of pedunculated growths. The universal forceps advocated by the author consists of Krause cutting blade on a universal handle.

OTTO M. ROTH, M.D.

NECK

Thomas, W. B., and Webb, C. W. Chronic Thyroiditis. *Chifton Med. Bull.* Chifton Springs, N. Y. 1913, IX, 1.

Chronic thyroiditis is sometimes called Riedel's disease because it was first described by Riedel in 1896. Since Riedel's report a few other cases have been reported.

The condition is interesting because it resembles cancer in its rapid development, the swelling of the neck, the compression of surrounding structures which are included in its growth, and its hardness. It differs from cancer in that the patient recovers when the constriction is relieved by the removal of a small piece over the trachea.

The typical case reported in this article was followed by myxedema due probably to the removal of too much of the growth. The sections showed only connective tissue. The authors emphasize the importance of avoiding too extensive removal and state that the use of the X-ray is contra-indicated on account of the danger to the few remaining thyroid cells. In conclusion they suggest that possibly cases diagnosed as cancer which recovered were in reality cases of chronic thyroiditis.

E. A. B. CRAWFORD, M.D.

Groover, T. A., Christie, A. C. and Merritt, E. A. A Review of the Treatment of Hyperthyroidism by All Methods, with Summary of the Authors' Experience with Röntgen Therapy. *Am. J. Roentgenol.* 9, 3, 285.

The authors discuss the treatment of hyperthyroidism by surgical means and by roentgen irradiation and call attention to the importance of general management such as rest, diet, symptomatic treat-

ment, and the removal of foci of infection. They conclude from variable statistics that in the exophthalmic type of hyperthyroidism the operative mortality is between 2 and 4 per cent while in hyperfunctioning adenoma it is about 1.5 per cent. Surgical treatment effects a cure in almost 75 per cent of the cases.

On the basis of Nyblcr's experience roentgen-ray treatment in hyperthyroidism offers the same chance of cure as surgery. Nyblcr concluded that radiotherapy is the best form of treatment for toxic goiter and the authors experience the average number of treatments necessary is five or six. The first four should be given three weeks apart and the next two at intervals of one month. After the fourth treatment the basal metabolic rate usually decreases steadily the weight increases, and the entire clinical picture indicates rapid improvement. When the condition does not improve after the fourth treatment, thyroidectomy is indicated.

The advantages of the roentgen treatment are its freedom from danger, its ease of application with a minimum of inconvenience and loss of time to the patient, and its suitability in inoperable and post-operative cases. *ANNALS L. SANCHEZ, M.D.*

Read, J. M., and Hatt, R. S. The Clinical Value of the Goetach Test. *Med. Clin. N. Am.* 1933, v. 7, p. 7.

The authors carried out the Goetach test on fifty-nine patients who were referred for the diagnosis of more or less obscure ailment and showed symptoms suggesting thyroid disturbance or obscure nervous manifestations.

In only 10 cases was clinical diagnosis of thyrotoxicosis warranted. Both of these showed little reaction to epinephrin. Two cases which showed a clinical picture of hypothyroidism gave positive reaction.

A positive response was given by forty cases. Sixty per cent of those giving positive response and 5 per cent of those giving negative response showed focal infection.

The authors explain the failure of cases of thyrotoxicosis to respond to the Goetach test by stating that certain cases show little disturbance of the sympathetic nervous system. They divide patients with thyroid disorders into three groups: those with manifestations of toxemia; those with alterations in the metabolic function of the body; and those with disturbances of the sympathetic nervous system. Since the response to epinephrin varies with the degree of involvement of the sympathetic system its value in hyperthyroidism depends upon whether the involvement of the sympathetic system is the predominant factor. *SANCHEZ L. KOCH, M.D.*

Strom, M. A Statistical Discussion on Goiter (Statistische Beiträge zur Struma). *Deutsche Zeitsch. f. Chir.* 1933, clxvii, p. 5.

The author reviews 4,379 cases of goiter operated upon in the past six years. Recently the incidence

of the condition in males has increased from 16.3 to 30.4 per cent. This finding agrees with other reports in the literature which indicate that in severe endemic the incidence in females is relatively less than that in males. According to the opinion of the majority of physicians, the incidence and severity of goiter have increased since the war.

The majority of the patients coming to operation are between 16 and 30 years of age. After the twentieth year the decrease in the incidence of the condition is greater in men than in women. According to the author's observations there is no relationship between strenuous work and goiter.

In the cases reviewed most of the goiters found in the young weighed between 50 and 100 gm., whereas those removed from older persons weighed from 100 to 150 gm. The heaviest goiter (that of a man of 43 years) weighed 865 gm. In two women, 31 and 51 years of age the goiters weighed 700 and 1,535 gm. respectively. Purely parenchymatous growths were found in 4.7 per cent of the cases. It was noted that the incidence of calcified goiters as given by test near the Alpine regions. Subjective respiratory symptoms were absent in 15 per cent of the cases; in 1 per cent there was difficulty in swallowing. Evidence of thyrotoxicosis as found in 25.8 per cent of the men and 44 per cent of the women. In women, therefore the toxic symptoms are most prominent and in men, the mechanical.

ROSEN, (2)

De Quervain, F. The Pathologic Physiology of the Different Varieties of Goiter and Their Influence on the Blood (Der pathologische Physiologie der verschiedenen Kropferarten und ihrer Einwirkung auf das biologische Verhalten des Blutes). *Schweiz. med. Wochenschr.* 1933, liii.

According to Asher the active principles of the thyroid secretion can be demonstrated in rats by variations in sensitivity to lack of oxygen. This reaction De Quervain has employed in clinical cases. Rats were fed thyroid gland or injected with arsenic taken from the area and thyroid tissue and then studied with controls with regard to their reaction to decrease in the oxygen supply. This test was made in 9 cases of thyroid disease. When goiter substance obtained from cases of Basedow disease was fed the sensitivity of the rats to deficiency in oxygen was greatly increased. The other forms of goiter caused decrease.

A certain agreement was found between the biological activity and the percentage and absolute iodine content of the thyroid tissue. Venous blood from the thyroid shows the same active effect as the substance but to less degree and venous blood from the area is still less effective. This is active in the common colloid goiter although clinical signs of hyperthyroidism are absent, while in the adenomatous goiter its activity is almost nil and in cretinism it is negative. Accordingly colloid goiter may be transition stage to Basedow goiter and the results of the experiments on rats were parallel.

the schools under medical supervision. The prevention of goiter means the prevention not only of simple goiter but also of conditions secondary to it such as cretinism, strabismus, larynx, certain adenomata, and certain cases of exophthalmic goiter.

F. VON T. H. DORNBERG, M.D.

Grier, G. W. X Ray and Radium Treatment of Goiter. *Atlantic M. J.* 9, 3, XVI, 56

Only cases of hyperthyroidism could be given radiation treatment as the aim of this therapy depends upon the power of the rays to inhibit or abolish secretory function or to destroy secreting cells. In the absence of hyperthyroidism, radiation is contra-indicated as it will reduce normally functioning gland to state of hypofunction. Moreover as it does not greatly decrease the size of the gland—destroyed cells being replaced by fibrous tissue—no cosmetic effect is obtained.

It is obvious that the diagnosis of the presence of hyperthyroidism is of prime importance. In the absence of exophthalmos this is not always easy. Since nervousness is common in the sick, and since thyroid enlargement is not an essential characteristic of hyperthyroidism, tachycardia is the only dependable cardinal symptom. A number of minor symptoms must also be taken into consideration. The latter include headache, caloric loss of energy, sleeplessness, depression, dyspnea, palpitation, digestive disturbances, profuse sweating and the association of a good appetite with weight loss. An anxious look is very constant. Grier has found the basal metabolism test of great aid in the diagnosis.

A small percentage of adolescent goiters are accompanied by hyperthyroidism, and although recovery often follows medical treatment, small amount of X-ray treatment combined with hygienic measures effects a cure in 100 per cent of the cases.

In cases in which exophthalmos and goiter are either joint or individually slight or absent but the hyperthyroid syndrome and an increased basal metabolic rate are present an examination should be made for such defects as diseased tonsils and teeth and an inquiry made as to the patient's habits and hygiene. The author has seen recovery follow the removal of the tonsils. He believes that hyperthyroidism without goiter is due to chronic infection or irritation, and that exophthalmic goiter is distinct entity due to alcohol,orry, etc. If the tonsils are diseased but tonsillectomy is contra-indicated, the tonsils and thyroid may be radiated at the same time. When probable exciting cause of hyperthyroidism has been removed in case without goiter radiotherapy is the treatment of choice.

The stage well-established case of exophthalmic goiter can be treated by radiotherapy usually with good results, but surgery is preferable if there are pressure symptoms or if the patient cannot afford the time necessary for radiation therapy if his lack of intelligence or home conditions make proper hygiene impossible or if he is convinced that surgery

is his only hope and therefore will not submit to protracted treatment.

If hyperthyroidism superimposed on simple goiter can be controlled by radiation, but as the goiter is not reduced, operation is preferable. Operation is preferable also in cases of hyperfunctioning intra-thoracic goiter especially if there are pressure symptoms.

Grier uses one-half skin erythema dose and powers one lobe at a time. The other lobe he treats after a week. After a two-week interval he repeats the process. The isthmus and thymus areas are not treated. Several months are required for the condition to return to normal. The radiation treatment must be supplemented by careful regulation of the patient's habits and hygiene. The rays used are of a penetration corresponding to 0.5 in parallel gap and are filtered through 6 mm. of aluminum. Only the gamma rays of radium are employed. The radium is placed in from the skin. The author believes that the action of the X-ray and radium is identical. In cases of severe hyperthyroidism care must be taken not to agitate at the condition by giving too large dose of radium. On account of the danger of secondary skin changes radiation should not be continued indefinitely. If no decided improvement is shown clinically or indicated by the basal metabolism after six months, operation should be performed. If there is slight improvement, radiation may be continued at long intervals and hygienic treatment persisted until the condition returns to normal. Grier uses no medicine whatever in conjunction with radiotherapy. Whenever he tried iodine or thyroid extract it made the condition worse.

F. VON T. H. DORNBERG, M.D.

Waterworth, H. J., Cole, L. G., Frazier, C. H. and Others. Discussion of Symposium on Goiter. *Atlantic M. J.* 9, 3, XVI, 59

COLLIER stated that he favored smaller doses of the X-ray than have been used in the past, and raised the question regarding injury caused by the rays to the parathyroids and the recurrent laryngeal nerves. He suggested that tetany may result from disturbance of the circulation after ligation of the inferior thyroid arteries. He recommended intravenous calcium treatment for tetany and stated that before operation thorough laryngeal examination should be made.

FRASER urged basal metabolism tests to differentiate the types of goiter. He never performs primary thyroidectomy in a case in which metabolic rate above 60 but always performs it when the rate is under 50. If approved of Grier's view on X-ray treatment, he holds that usually there is less hazard in double ligation than single ligation and in double lobectomy than single lobectomy.

NEWCOMB reported the relief of symptoms by the X-ray when operation failed. He stated that he follows the dosage outlined by Grier and recommends radium for very irritable cases. He believes that in selected cases radiation may be tried before opera-

tion. As the correction of eyestrain, constipation, etc. may relieve all symptoms, he studies every case subjected to radiation as carefully as though it was to be operated upon.

WARREN emphasized the importance of focal infection and stated that the removal of foci will often cause the disappearance of the entire goiter syndrome. He questioned the advisability of calling the thyroid enlargement of adolescence a goiter.

ROBERT recommended basal metabolism tests. He has had good results in cases sent to the roentgenologist for treatment. He stated that if the metabolic rate is high, the radiation should be preceded by rest in bed and dietary treatment.

GUTMAN called attention to the hyperemic skin of exophthalmic goiter which will not stand strong X-ray doses. Only experts should handle these cases.

MARINE expressed the belief that in exophthalmic goiter the thyroid is involved only secondarily, the primary stimulus lying outside of it, probably in the field of disturbed inter relation of sex and para-sex glands with the thyroid. He stated that at present the best method we have to control exophthalmic goiter consists in depressing the metabolic rate by partial thyroidectomy but that this is crude and attacks the problem at the wrong end. He views exophthalmic goiter and toxic adenoma as different phases of the same condition, it being largely a question of the age at which they develop. The adenomata become toxic at about the time of the menopause, but the vast majority of adenomata are not associated at any time with toxic symptoms. Simple goiter is decreasing, but exophthalmic goiter is on the increase. Prevention of the former is easy but of the latter difficult and poorly understood.

Foss pointed out that denomatous goiters, even those without toxic symptoms, seem to play a rôle in causing myocardial changes. Other authorities have shown a relationship between nodular goiters and myocarditis. Patients who have had ligations or single lobectomies must be treated as they all suffer a relapse necessitating a more complete operation.

GRANT stated that radiation does not destroy but causes regression of the thyroid and perhaps has the same effect upon the parathyroids. As nerves are very resistant to the X-ray the recurrent nerve is not endangered. FRANCIS T. H'DOUVER, M.D.

Foss, H. L. The Surgical Treatment of Goiter. *Atlantic M. J.* 9, 3, 1911, 903.

The author gives a brief review of the development of present day theories as to the physiology and pathology of the thyroid gland and as to the cause, prophylaxis, and treatment of goiter.

He is convinced that the proper treatment for the large nodular so-called denomatous and cystic goiters of adult life is surgical because they are unsightly and annoying, embarrass respiration and degeneration, and cause degenerative changes in the cardiovascular system. The diffuse colloid goiters of adolescence should usually be given medical

treatment (iodine and thyroxin). In some cases, however, this fails and causes nervousness and loss of weight.

Cases of hyperthyroidism, whether due to a hyperfunctioning adenoma or excessive gland secretion produced in the hyperplastic and hyperactive stroma of an otherwise normal gland, have one feature in common, namely an increased basal metabolic rate. Hyperthyroidism may be associated with colloid goiter, colloid adenomatous goiter, multiple degenerative adenomatous goiters, and diffuse parenchymatous hyperplastic goiter. Hemorrhage, inflammation, and calcification are no more common to the thyroid than to other tissues. The treatment of hyperthyroidism should be surgical. Experience and judgment as to the type and time of operation are of the greatest importance. In all but the moderately toxic cases, the multiple-stage plan of treatment is advisable, ligation of one superior pole being followed in from four to six days by ligation of the other pole. Possibly the inferior poles are ligated next, thus being followed by a one- or two-stage resection of the gland.

The author protests against the loss of valuable time through useless medication in cases of hyperthyroidism, believing that such therapeutic measures are justifiable only as adjuncts to surgery. In the preliminary treatment of severe toxic cases, the X-ray and radium are valuable, and in skilled hands may rival surgery, but their effect is slow and the probability of relapse is great.

Many patients have been operated upon for hyperthyroidism when the symptoms were those of effort syndrome, disordered heart action or neurasthenia, but, conversely, a greater number of cases of hyperthyroidism have been misdiagnosed and allowed to go untreated. The author attributes the prevailing confusion in diagnosis to the placing of reliance on the Goettsch and other tests instead of upon the basal metabolism and judgment based on experience.

FRANCIS T. H'DOUVER, M.D.

De Quervain, F. Protection of the Parathyroid Glands (Über den Schutz der Epithelkörperchen). *Beitr. Klin. Chir.* 9, 3, 1911, 197.

The parathyroid glands are endangered by too extensive removal of the posterior surface of the thyroid lobes and by ligation of the inferior thyroid artery or its branches close to the capsule of the gland in the region of the arterial branches supplying the parathyroids. This was the main reason why de Quervain some time ago emphasized the importance of preserving the posterior capsule in the region of the endangered zone, namely the cervical connective tissue. De Quervain's experiments led to the ligation of the inferior artery outside of the capsule.

In 2,303 cases treated by de Quervain there was no case of marked tetany. Slight functional disturbances of the parathyroids were noted in only three cases, which were among the 49 per cent of the total number operated upon on both sides during the last few years.

HAROLD (Z)

Uphely, J. The Omission of Drainage After Thyroidectomy (Die Drainage bei Strumektomie) *Arch f klin Chir* 92: 200, 5

The author discusses the advisability of drainage after thyroidectomy on the basis of 323 cases treated at the Bier clinic. He arrives at the following conclusions:

Drainage cannot prevent the formation of hematoma, the accumulation of secretion or the primary infection, but it will prevent the dissemination of infection. On the other hand it readily leads to the formation of fistulae and secondary infection, prolongs the healing, and causes an unsightly scar. The undrained cases showed no greater postoperative fever than the drained cases. Kocera (Z)

Porter, C. A. An Analysis of My End-Results in Thyroid Surgery. *Surg Gynec & Obs* 19: 3, 1914, 6

The author divides his series of cases into two groups, those of malignant diseases of the thyroid and those of toxic goiter. He has not analyzed his non-toxic goiters, but states that he has had 50 with but one death, this fatality being due to pneumonia and hemorrhagic nephritis.

There have been nineteen cases of malignant disease. One patient whose condition was diagnosed as malignant lymphoma is well nearly eleven years after a subtotal thyroidectomy. Three patients with mixed cell sarcoma died within a few days or weeks after the operation. Of fifteen cases with diagnosis of carcinoma the results of treatment in eight are poor. Of the seven other patients, four were well one, five, seven, and ten years respectively after operation and X-ray treatment.

In cases of encapsulated adenoma which has undergone malignant degeneration the prognosis for cure is favorable, but when the tumor has become fixed to the trachea and has involved the recurrent laryngeal nerve, it is particularly unfavorable. The author recommends radical operation if the X-ray examination shows the lungs to be negative and it is probable that all obvious disease can be removed. Local anesthesia is much to be preferred to general anesthesia. If malignant disease must be left behind, radium needles and X-ray treatment should be employed. Inoperable recurrences may be benefited by X-ray treatment. Operation offers more in the way of palliation or cure than treatment with the X-ray or radium alone.

The author's series of toxic goiters comprised 304 cases. The mortality based on the number of patients rather than operations has been steadily diminishing. When there is doubt as to the advisability of proceeding to operation, Porter advocates packing the wound with gauze and deferring the completion of the operation. At the Massachusetts General Hospital thyroid clinic consisting of two medical men, two surgeons, and a roentgenologist has given X-ray treatment thorough trial. If one case presents an enlarged thyroid, this gland is radiated as it is believed that the operative risk is there

by decreased. The author cites cases of exophthalmic goiter and toxic dermatitis in which X-ray treatment caused considerable improvement or cure as judged by the basal metabolic rate. After preliminary rest, with or without X-ray treatment, the graded operation is best—ligation or ligatures, hemithyroidectomy or subtotal thyroidectomy.

In the 304 cases analyzed there were twenty-four deaths in the hospital and nine deaths after discharge. The author reviews these cases in detail with comment as to possible errors, especially that of doing too much too soon. Of the hospital deaths, thirteen were due to hyperthyroidism, thus being more frequent cause early in the series; six were due to pneumonia or bronchitis, two to pulmonary emboli, one to tetanus, one to status lymphaticus and one to shock. The nine deaths occurring after discharge were due to various causes; hyperthyroidism was responsible in only one case. The remaining cases heard from (47)—excluding twenty-six treated recently—are classified as unimproved, improved but not cured, cured with mental symptoms, cured with cardiac symptoms, and cured. A number of the cases are discussed. The best index of cure is permanent reduction of the basal metabolism to normal.

Porter finds from his cases that though ligation and hemithyroidectomy may often effect cure, the ultimate subtotal thyroidectomy most quickly and permanently reduces the basal metabolism to normal. The psychoses of hyperthyroidism require long after treatment.

In Porter's cases there have been no severe secondary hemorrhages despite some very bloody operations. A careful preliminary examination of the larynx is imperative to prevent nerve injury. Such injury occurred in 1 per cent of the series, excluding malignant cases, and was more frequent in the earlier than in the later operations. Bilateral paralysis may be overlooked as the cure may be fairly good although high pitched and there is dyspnea only at night or after exertion. Severe cases may require tracheotomy.

Infection is more common in drained than in undrained wounds. Local anesthesia seems to predispose to infection. Porter prefers deep drainage through the ends of the incision with small superficial drains in the midline outside the sutured pre-thyroid muscles. Fine silk is used for suturing. The stitches should be loosely tied and removed on the third or fourth day. FRANK T. H. DOUGLAS, M.D.

Mayo, C. H. and Boothby, W. M. The Mortality Rate Following Operations on the Thyroid Gland. *J Am Med Ass* 9: 5, 1914, 10

At the Mayo Clinic, during the year 1913, there were nineteen deaths following 983 operations on 1,497 patients for diseases of the thyroid gland, making the operative mortality 96 percent. This—the common method of presenting statistics on goiter—not only fails to reveal the truth but conceals facts which, when brought out by a more

detailed study prove to be of great value. Statistics on surgery for goiter should be carefully and accurately analyzed, and the results presented for each disease on the basis of the number of cases.

An accurate basal metabolic rate is an index of the intensity of the disease in both exophthalmic goiter and adenomatous goiter with hyperthyroidism and therefore, in conjunction with other factors, is of help in the selection of the best time for operation and the best type of surgical procedure. The basal metabolism is of even more importance as aid in the establishment of correct differential diagnosis of the various thyroid diseases. As a result of its use many unnecessary and sometimes harmful operations are avoided.

In this report all patients who died while under observation in Rochester immediately after surgical intervention on the thyroid gland are classified as having died from surgical procedures, regardless of the cause of death. The surgical mortality by cause according to Plummer's classification of thyroid diseases was adenomatous goiter without hyperthyroidism, 15 per cent; adenomatous goiter with hyperthyroidism, 3.48 per cent; and exophthalmic goiter, 1.99 per cent. The mortality rate for thyroidectomy in exophthalmic goiter is .96 per cent. The surgical mortality is based on the combined work of eight surgeons.

Kessel, L. and Hyman, H. T. Studies of Graves Syndrome and the Involuntary Nervous System. II. The Clinical Manifestations of Disturbances of the Involuntary Nervous System (Autonomic Imbalance). *Am J Med Sc* 91: 515-53.

By way of introduction the authors offer the phylogeny and embryology of the involuntary nervous system, the anatomical and physiological differences between the involuntary and voluntary nervous system, the thoracolumbar and bulbosacral subdivisions of the involuntary nervous system, and the factors which maintain the tonicity of the involuntary nervous system. Their report deals with cases in which the symptoms can be ascribed to disturbances in the realm of the involuntary nervous system. These symptoms they divide into three groups. The first group includes those which are objective and due to disturbance of the function of an organ in which no lesion can be demonstrated by the most painstaking clinical examination. The second group differs only in that the manifestations are subjective. In the third group are such symptoms as asthma and tremor. To the syndrome presented by the association of these symptoms the authors apply the term "autonomic imbalance." In it they include conditions ordinarily called larval hyperthyroidism, the forme fruste hyperthyroidism, Basedowoid, suprarenal insufficiency, etc. Eighty-six cases were studied. In none was there definite or constant elevation of the basal metabolism, but autonomic imbalance was present in all.

The factors that predispose to this syndrome are at present unknown. As exciting causes, sex epochs, focal infections, and psychic insult are mentioned. Among the subjective symptoms are palpitation, dyspnea, headache, insomnia, and loss of weight, while the objective symptoms include diarrhea, eye signs, gastric disturbances, menstrual disturbances, sweating, vasomotor instability, mental disturbances, tachycardia, irregularities of cardiac action, and tremor. Reference is made also to phenomena that may be inferred to be sympathomimetic since they are frequently present in autonomic imbalance and are accentuated by adrenalin. Such are nervousness, asthma, goiter and elevation of the basal metabolism. Interesting also is the reference to associated conditions, the correlation of symptoms,

and sensitiveness to drugs. A table shows the responses to the subcutaneous injection of atropin and adrenalin in two groups of normal persons (medical students and convalescent patients). Of these about 22 per cent reacted to atropin and 50 per cent reacted to adrenalin. The most constant symptoms observed in these patients were tachycardia and goiter without fever or change in the basal metabolism.

Unless the exciting cause of the imbalance can be removed, the results are extremely discouraging. The condition usually runs a long course.

The important points brought out in the article are summarized as follows:

1. A study of the clinical manifestations of autonomic imbalance is presented.

2. Such instability of the involuntary nervous system probably constitutes a diathesis.

3. Focal infection, psychic trauma, and the sex epochs accentuate the syndrome.

4. The symptoms are strikingly similar to those of Graves syndrome. Autonomic imbalance may co-exist with myxedema.

5. Local manifestations in a single organ, such as the stomach or heart, may attract attention to that organ instead of to the general disturbance of the involuntary nervous system.

6. Hyperplasia of the thyroid gland is very frequently associated with the syndrome. It is more apt to be secondary than causative.

7. In autonomic imbalance there is never a distinct and continuous elevation of the basal metabolism. This constitutes an important difference from Graves syndrome.

8. The recognition of clinical autonomic imbalance is simple. More important, however, is the exclusion of Graves' syndrome and the determination of the exciting cause of the imbalance.

9. There are no scientific data to prove the participation of the ductless glands in the production of this syndrome.

While persons with autonomic imbalance are usually sensitive to atropin and adrenalin, this drug sensitiveness may be present in the absence of autonomic imbalance. These facts may be explained on a pharmacological basis.

22. Clear cut subgrouping of such persons into vagotonic and sympathetonic cannot be made clinically until definite knowledge regarding the tonus of the involuntary nervous system has been gained.

Autonomic imbalance can rarely be arrested permanently. Usually the symptoms may be alleviated, but the diathesis persists.

23. Hormone therapy is without foundation and is useless. E. C. ROSENTHAL, M.D.

Edlund, L. The X-Ray Treatment of Basedow's Disease (Erfahrungen unter der Röntgenstrahlung bei Morbus Basedow). *Fortschr. d. Geb. d. Röntgenstrahlen* 923 XXX, 7.

Of thirty of the cases of exophthalmic goiter which were treated with the X ray by the author during the period from 1915 to 1919, twenty five showed definite Basedow syndrome, while five were of the forme fruste type. Thirty per cent of the patients were rendered almost free from symptoms, 43.3 per cent were benefited, 20 per cent were not benefited or died, and 6.7 per cent developed a recurrence.

Of first importance in judging the results is the pathologically changed metabolism indicated by the body weight. Next, the vasomotor disturbances must be taken into consideration (tachycardia, enlargement of the heart, diarrhoea, sweats) and finally the nervous symptoms, such as restlessness, etc. Of less direct importance are the goiter, exophthalmos, and tremor. These visible phenomena reveal treatment longest. The majority of the cases were given hygienic and dietetic treatment in addition, but the author believes that the roentgen treatment was chiefly responsible for the cure. In most of the cases distinct improvement occurred within four months.

It is interesting to compare these cases with those given surgical treatment. An advantage of surgical treatment, which gives about the same results as roentgen treatment, is that it effects a cure more quickly. This is not offset, however, by the danger of postoperative Basedow death, which occurs in about 1 per cent of the cases. Failure of the roentgen treatment which occurs in about 20 per cent of the cases, is still unexplained. As usually these are severe cases, it is probable that the explanation must

be based on the still not sufficiently understood pathogenesis of the disease and the frequent difficulty in the clinical differentiation of the uncomplicated Basedow syndrome. Other causes cited, such as the duration of the disease, differences in the technique of radiation, unfavorable living conditions, serious cardiac changes, etc. have not been proved. An objection to roentgen treatment advanced by von Eschberg and Mayo is that it causes adhesions between the gland and the surrounding tissues which render subsequent operation more difficult. In the author's opinion this objection is not valid because among the Basedow cases operated upon in Lund, sclerotic changes were found even in some of those which had not been radiated.

VOLLHARDT (2)

Fried, C. The Roentgen-Ray Treatment of Basedow's Disease (Ueber Röntgenstrahlbehandlung des Morbus Basedow). *Deutsche Zeitschr. f. Chir.* 91 CLXXXV, 54.

In thirteen cases the practicability of roentgen ray treatment was proved. After the conclusion of the treatment the patients were re-examined at regular monthly intervals. The technique used was essentially that recommended by Nordentoft and Blume. High dosages were employed. With 8 ma secondary current 83 k secondary gap, and distance of 5 cm there was given to the thyroid 80 per cent, and to the thyroid 90 to 95 per cent, of an erythema skin dose. At first an aluminum filter of 3 to 5 mm was used. Later 1/2 mm of zinc and 1/4 mm of aluminum were employed. Most of the cases were given radiation for the second time after a period of three months.

Considerable improvement resulted in all of the cases. The subjective complaints of fear and nervousness disappeared early but certain irritability of the circulatory system persisted longer. Full ability to work returned. Objectively improvement as indicated by slowing of the pulse, cessation of tremors, gain in weight, and the condition of the blood. The increased hemoglobin content, the overcoming of the leukopenia, and the disappearance of the lymphocytosis were all worthy of note. The results justify more extensive investigations with radiation.

REINERT (2)

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS; CRANIAL NERVES

Michael J. O. The Old Head Injury Case. *J Am M A* 93 1907 947

This article is summarized as follows

1 One hundred old head injury cases were studied with special reference to the neurological complications, the probable factors in their production, and the degree of the vocational handicap

2 Except in cases of penetrating brain injury the prognosis for life is very favorable if the immediate complications are overcome

3 Freedom from invalidism is uncommon Fifty three per cent of persons so injured are unable to support themselves

4 Careful, early treatment will do much to prevent chronic invalidism

5 Increased intracranial pressure and signs of local irritation are the only indications for surgery of the head in the acute as well as the chronic case

CARL R. STREETER, M.D.

Martin, P. and Cushing, H. Primary Gliomata of the Chiasm and Optic Nerves in Their Intracranial Portion. *Arch Ophth* 93, 1907, 509

This article is concerned with the report of seven tumors, all of them gliomata which seemed to have originated either in the chiasm or the optic nerves adjacent to it. In only one instance, and then because of a co-existent disorder was the origin and character of the lesion surmised before operation. Though a correct localizing diagnosis of a suprasellar lesion had been made in every case except two, a tumor of hypophyseal or pharyngeal pouch origin with secondary involvement of the chiasm through pressure was sought.

The authors favor the anterior route for exposure of the suprasellar region. The mortality of these osteoplastic procedures is very low and in the majority of cases they afford an excellent view of the region from in front without damage to the brain.

At the time this article was written the Brigham Hospital series included 836 histologically verified intracranial tumors. Of these, 345 (41 per cent) were gliomata of various types and regions. The seven chiasmal tumors included in this report therefore represent only 2 per cent of the 345 gliomata and only 0.84 per cent of all verified tumors.

The 33 verified tumors arising from or near the hypophysis and affecting the chiasm by direct pressure were as follows: hypophyseal adenomata of all types, 64; cranio-pharyngeal pouch tumors, thirty-eight; endotheliomata, thirteen; interpeduncular gliomata, thirteen; teratomata, three; and epidermoid cholesteatomata, two.

In seventy-two cases a transfrontal operation was performed for obviously suprasellar lesions and the region of the chiasm brought into view. In eleven of these cases the nature of the lesion was not determined. The sixty-one cases which were histologically verified included twenty-seven tumors of the cranio-pharyngeal pouch, nine suprasellar endotheliomata, eight hypophyseal adenomata, five adenomatous cysts, five chiasmal gliomata, three cases of arachnoiditis circumscripta, two epidermoid cholesteatomata, and two gliomata of the third ventricle.

The authors give the histories of five cases of chiasmal glioma found at operation and of two others which were first discovered at autopsy. The report includes forty-two illustrations.

Except in the presence of obvious evidences of von Recklinghausen's disease the differential diagnosis must be based chiefly upon the findings of the ophthalmoscope, the perimetry and the X-ray.

All of the seven cases reported showed an advanced optic atrophy and in five there was no doubt that it was primary as would be expected from a lesion of any sort whatsoever which compresses the nerves or chiasm. So far as noted, the ophthalmoscopic picture of these conditions is indistinguishable.

In all instances except the last the loss of vision had been comparatively rapid and progressive, so that by the time the patient came under observation it had advanced to blindness in one eye at least. One patient was totally blind on admission, and two of the young children, in whom the registration of visual acuity was not possible, had apparently but little vision left. In the three patients whose acuity was recorded, vision was lost in one eye and greatly impaired in the other. Marked diminution of vision in the less affected eye seems to be a characteristic of cases of chiasmal tumors.

Perimetric observations which were regarded as reliable were possible in only three cases. In all of these there was a defect in the temporal half of the field, but in no instance did the hemianopsia show the clean vertical bisectrix which is so often characteristic of pituitary tumor.

A tendency to adiposity was apparent in four of the patients, a slight degree of polyuria and polydipsia in two of them, somnolence and lassitude in two, and loss or lack of hirsuties in two. In none of the patients, however, were these symptoms sufficiently evident to justify the designation of adipogenital dystrophy which characterizes advanced grades of pituitary insufficiency.

Comparative differential points between the chiasmal and the more common variety of suprasellar tumors arising from Rathke's pouch are as follows:

Tumor of the Cerebrospinal Fluid

Primary optic atrophy. In late stages because of hydrocephalus, atrophy may be misinterpreted.

Retrolental hyaline, or if vision is lost in one eye, early optic atrophy, noticed in the seeing field of the other eye.

Process slow, often progressive, stationary for long periods.

Cells markedly distorted or lumpy or normal. Posterior of optic nerve affected than anterior. Secondary glaucoma common.

Secondary primary involves callosal commissure with subsequent atrophy and lateral elongation.

Tumor of the Chiasm

Primary optic atrophy usually with tumor involvement of the optic band. Distinctly demyelinated in advanced cases.

Acuity low in both eyes with double choroid but typical bilateral optic defects.

Process on the whole more rapid and progressive.

In advanced cases with slow repeated advances as far as optic chiasm brief duration of optic neuritis. No separation of optic nerves.

Secondary primary involves basal hypothalamus. Common involvement of eye. Enlargement of optic chiasm to be sought.

The microscopic picture in the seven cases was unmistakably that of glioma. The authors give a complete description with each case report. As is true of gliomata elsewhere in the brain, there was considerable difference not only in the architecture but also in the structure of the several tumors.

Glioma is designated as those tumors of the central nervous system which, with proper selective stains, show glia fibrils.

Whether complete removal of the chiasm involved in one of these lesions would be justified if the growth happened to be exposed at an early stage of the process and before it had spread is doubtful. The authors express this opinion in spite of the favorable prognosis given by ophthalmic surgeons in such a large glioma has been removed with the orbital portion of the nerve. In the present stage of our understanding of the therapeutic possibilities of deep radiation treatment with radium or the X-ray though its encouraging, is probably the best hope but final judgment on these matters must be deferred.

The authors' conclusions are as follows:

"One consideration certainly will be of interest to ophthalmologists, namely that we have here another explanation for some of the obscure cases of primary optic atrophy so often attributed to a retrobulbar neuritis. They will promptly recognize that we have dealt in this paper with lesions already familiar to them though largely when the process of tumefaction within one orbit has reached such size that exophthalmos results.

It is quite possible that we will all, ophthalmologists, neurologists, and neurosurgeons, come to recognize these lesions with sufficient accuracy to permit us either to avoid operation altogether or at least to know better what sort of a lesion we will have to deal before surgical exposure.

Certainly a primary atrophy in cases of generalized neurofibromatosis or even those with slight manifestations of this malady will rest under suspicion of having gliomatous process in the chiasm or its adjacent nerves. Suspicion will be aroused also when there is an obvious swelling of an atrophic nerve band without evidence of increased intra-cranial tension.

But even in the absence of these tell tales of the process, when primary atrophy of the nerves in young persons is associated with the peculiar stilted deformation which has been described, and without the shadows usually cast by the more common tumors of this region in childhood, one may well consider the possibility that the symptoms are due to a primary glioma of the chiasm.

CARL R. STEINER, M.D.

Marichemeyer, C. Resection of the Choroid Plexus in Severe Unilateral Internal Hydrocephalus. Traumatic Ventricle Cyst (Resection des Plexus choroïdes bei einseitiger hochgradiger Hydrocephalus internus traumaticus Ventricle cyste). *Arch f. Klin. Chir.* 9, 2, Card. 74.

The theory that the cerebrospinal fluid has its origin principally if not exclusively in the choroid plexus of the ventricles of the brain is gaining in probability. Dandy applied it in the treatment of internal hydrocephalus, since in the cases of four children he incised the brain and ligated and resected the tela choroidea where it makes its exit from the foramen of Monro. The author also has had an opportunity to remove this plexus and believes from his three weeks' observation of the case that he is justified in drawing conclusions regarding its influence upon the formation of cerebrospinal fluid.

The patient, who was years of age, was brought to the hospital on account of epilepsy. This child had been delivered with instruments after three days of difficult labor and suffered an attack of convulsions on the first day of life. One year later the convulsions returned, continued longer and increased in severity. There was no noteworthy mental defect. The left hand hung limp and useless. The left foot was maintained in a slightly spastic equinus position. The diagnosis was infantile spastic hemiplegia.

An osteoplastic trephination was done in the right parietal and temporal region under the assumption that the condition was traumatic cyst in the central region. The dura, which did not reabsorb showed a central area. When it was opened, a bluish, translucent cyst was revealed. This was incised after the removal of watery fluid by puncture. There was then exposed a cavity, 7 cm deep, 7 cm wide, and 1 cm long, which had smooth walls. In the center of the base of this cavity was the foramen of Monro from which issued the plexus, floating free in cerebrospinal fluid. Therefore the cyst was the dilated lateral ventricle.

A portion of the skull the central area in the dura, and portion of the thin cyst wall, were excised and the wound as tightly closed. The cyst was found to be connected with the subcutaneous tissue. Resorption of the cerebrospinal fluid was manifested by edema of the soft parts around the wound and the eyelids, but this soon disappeared. Subsequently the cavity refilled, the bony covering being lifted up. A cerebrospinal fluid fistula was formed in the

suture line. On account of the marked increase in pressure lumbar puncture became necessary. Lumbar pressure finally increased to 360 mm. of water and there was marked bulging of the skull.

As the patient's condition became continuously worse, it was then assumed that the secretion of cerebrospinal fluid was increased by irritation of the choroid plexus and that a valve closure had occurred between the ventricles and lumbar space. Therefore at the end of six days the old wound was reopened, the skull flap turned back, and the plexus, which was adherent at the base of the brain cavity, was ligated at its exit from the foramen of Monro and removed. Between the skull and the epicranium tunnel was formed through the soft parts behind the right ear and tamponed with iodoform gauze.

After the operation there was marked edema of the face and in the region of the wound. The tampon was therefore removed and the wound canal extended down. The patient's general condition then became remarkably good, but on the twenty-fifth day after the first operation, when he was about to be discharged from the hospital, convulsive twitchings of the left half of the body and coma suddenly developed. Death resulted at the end of the third day following an epileptic seizure.

Autopsy showed principally in the frontal region of the right hemisphere a defect as large as a fist (the enlarged lateral ventricle). The frontal convolutions were flattened and thinned, the islands of Reil were completely destroyed, and the lower portions of both central convolutions were similarly affected. The large trunk ganglia at the base of the cyst could not be recognized. The reacted plexus appeared normal.

A second opportunity for plexus resection was offered in case of congenital hydrocephalus.

The patient was a poorly developed infant 5 months old. The circumference of the head was 56 cm. Cerebrospinal fluid was removed by puncture done first on the left side and a few days later the right side. When trephination was performed in the right temporal region the protruding brain broke open and discharged cerebrospinal fluid in stream. The right lateral ventricle was enormously dilated. The choroid plexus was ligated and removed.

Death occurred seven days after the operation. Autopsy revealed dilatation of the fourth ventricle and status thymicolympathicus. The plexus was very large and thick and showed enormous dilatation of the vessels even of the capillaries. At several points there were blood lacunae. STREIBLER (2)

Cohn, E. Gummata of the Hypophysis (Gummata der Hypophyse). *Arch f path Anat* 9 3, col. 45

The author reports a case of gummata degeneration of the hypophysis involving the infundibulum and the optic chiasm and originating in the floor of the third ventricle. The patient was a 45-year-old woman who showed the clinical symptoms of tertiary

syphilis, later the initial stage of adiposo genital dystrophy and finally hypophyseal cachexia, and died following the sudden appearance of cerebral symptoms. Autopsy showed that all of the posterior lobe and most of the anterior lobe of the hypophysis had been destroyed by syphilitic granulation tissue with milium caseous gummata.

This is the first case of hypophyseal gummata which adiposo genital dystrophy on a syphilitic basis was diagnosed clinically and confirmed by autopsy.

The author reviews the literature of the disease discussing twenty-one cases, seventeen of acquired and four of congenital syphilis. Females are affected much more frequently than males, probably because of the burden placed upon the hypophysis during pregnancy. The anterior lobe appears to be particularly susceptible to the syphilitic virus. Hypophyseal gummata range in size from that of a small pea to that of a walnut.

The clinical diagnosis of hypophyseal lesions is based upon the presence of acromegaly, adiposo-genital dystrophy and hypophyseal cachexia. But the two former syndromes cannot be considered decisive in all cases. In acromegaly it is difficult to conceive of a syphilitic involvement of the anterior lobe in the form of an eosinophile adenoma which causes both an increase in the internal secretion and erosion of the pituitary fossa. The adiposo genital dystrophy is generally as in the case reported by Cohn, quickly overtaken by the hypophyseal cachexia caused by the rapidly advancing destruction of the hypophysis and therefore is of significance only in the early stages.

BURTON (2)

Levison, L. A. and Alter, F. W.: Glioma of the Optic Thalamus. *Am J Ophth* 9 3, 38, 468

Levison and Alter present a very complete case report with cuts showing the gross and microscopic anatomy of the tumor and one field of vision. The patient was a man 66 years old. The points of particular interest in the case were (1) early hemorrhagic retinitis of one eye followed suddenly a month later by choked disk (2) complete external ophthalmoplegia of one eye with proptosis (3) negative X-ray pictures and (4) the absence of sensory symptoms, choreiform movements, and tremor.

THOMAS D. ALLEY, M.D.

Burbanks, C. W., and Gerstenberger, H. J.: Internal Hemorrhagic Pachymeningitis in Infancy. Report of Five Cases. *J Am Assoc* 9 23, 604

Internal hemorrhagic pachymeningitis occurring in infancy cannot be considered a rare disease. The authors discuss the various theories advanced regarding its pathogenesis and report five cases treated in their own clinic within a period of three years. These cases do not bear out the contention that infections, especially syphilis and diphtheria, are causative factors or that a poor state of nutrition

plays an important rôle. The authors believe that in four of their five cases trauma was a factor.

The prominent signs of the disease are retinal hemorrhages, fontanel puncture revealing bloody or yellow fluid in the subdural space, convulsions, a bulging fontanel, enlargement of the head, and nasal discharge.

Additional observations were made in two cases in which the calcium content of the fluid obtained through the fontanel puncture was determined and found to be decidedly lower than that of the blood serum, whereas the inorganic phosphorus content of the fluid and blood serum was practically the same. Since the results are the same as the figures usually obtained by determinations on whole blood, it would seem logical to conclude that the fluid in these subdural cysts is blood unaltered except for the solution or digestion of all or part of the red blood corpuscles. This conclusion, however, is not supported by the amounts of sodium and potassium, which were the same as in serum, nor by the percentage of protein, which showed great variation.

The coagulation time and the bleeding time were normal in three cases in which the tests were performed. **WILLIAM E. SHACKLETON, M.D.**

SPINAL CORD AND ITS COVERINGS

Vleta, H. R. Acute Ascending Meningomyelitis Possibly Resulting from Arphenaminin Therapy. *Boston M & S J.* p 3, December, 1935.

The case reported by the author seems to fall into the acute spreading myelitis group of Collier which is ascending in character and associated with definite meningeal involvement. It varied somewhat from other reported cases in its great rapidity of development and the completeness of the cord involvement. A possible etiological factor is suggested in an arphenaminin reaction somewhat analogous to encephalitis hemorrhagica. The possibility that the case was one of thral hemorrhage, spreading polyomyelitis, or acute ascending polyneuritis seemed to be ruled out by the history, course, and the spinal fluid findings. **SAMUEL KANE, M.D.**

PERIPHERAL NERVES

Stoohley B. Artificial Nerve Branches for the Innervation of Paralyzed Muscles. *Arch Surg.* p 3, VI, 73.

When nerve trunk is injured at level at which important muscular branches are given off the muscles supplied by these branches are usually permanently paralyzed as there remains no path for the conduction of neurones from the nerve trunk to the muscle. The object of the author's research was to find means of forming nerve branches artificially.

A method was found whereby nerve trunk could be made to grow nerve branches at any level in its course and to supply any of the muscles which it

supplied formerly. Artificial nerve branches were made by using a free autogenous nerve transplant, preferably a small cutaneous nerve. The central end of this transplant was sutured into the nerve trunk and the distal end implanted directly into the muscle to be innervated.

In selecting the point on the nerve trunk for the suture of the artificial nerve branch, it would perhaps be preferable, on general physiological grounds, to choose level near that at which the muscular branches came off formerly.

Five dogs were employed in the author's experiments. The first, small black French poodle, died at the end of twenty-four days. The nerves on the inner side of the foreleg of the animal were exposed above the elbow in the usual manner. When the median nerve was traced, there seemed to be two branches, one on either side of the brachial artery. These were traced beneath the artery where they waited at the biceps tendon and passed in the direction taken by the median nerve. The dissection of the biceps was done to make sure that no branches entered from the median, ulnar or musculospiral nerve. The ulnar nerve was isolated in the middle third of the arm, and an adjacent skin branch, 3 cm. long was freed and cut after a waxed silk suture had been passed at either end.

The same technique was used in the experiments on the four other dogs. One of these animals died and the others were killed a certain number of days after the beginning of the experiments.

The author draws the following conclusions from his work:

When muscular branches are destroyed and nerve suture is impossible, paralyzed muscles may be innervated by the formation of an artificial nerve.

When free nerve transplant is sutured to the nerve trunk and the distal end is implanted directly into the muscle, the free nerve transplant serves as conduction path from the nerve trunk to the muscle.

3. An artificial nerve branch may be made for a muscle from nerve trunk which normally supplies the muscle. If this nerve trunk is totally destroyed, branch may be made from an adjacent nerve. Thus muscle can be brought under the domain of nerve which does not supply it normally, for example, the biceps may be supplied by an artificial branch from the musculocutaneous or if the musculocutaneous is destroyed, it may be innervated by an artificial branch from the ulnar or median nerve.

4. Evidence that paralyzed muscles may be neurotized by an artificial nerve branch was shown by electrical stimulation of the artificial nerve branch which resulted in rapid and quick contraction of the muscle, by the normal size and color of the muscle, and by the histologic findings which revealed normal striations in the muscle fibers. The presence of nerve branches and nerve fibers in the muscle thus innervated is conclusive evidence that neurotization has taken place.

GROVER E. BILEY, M.D.

Heyman, C. H. The Stiefel Operation for Spastic Paralysis. *Surg Gynec & Obst* 1933 xxxvi, 63

The value of any operative treatment for the relief of spastic paralysis cannot be determined without taking into account the degree of associated mental impairment. Whatever the mental condition, however a good functional result may render the patient more useful member of society and possibly may cause some mental improvement. The four clinical types—spastic diplegia, spastic paraplegia, spastic hemiplegia, and spastic monoplegia—present descending scale of mental impairment.

The author gives the Tabby etiological classification of spastic paralysis and reviews the limitations of, and indications for various procedures which have been employed in this condition, such as tenotomy, tendon transplantation, resection of posterior nerve roots, cranial decompression, the injection of alcohol into the nerve, and intra-perineural neurotomy. The so-called Stiefel operation appeals because of its simplicity; the exact dosage possible; the slight likelihood of a recurrence of the contracture, and the absence of a consequent disturbance of sensation.

This operation utilizes the anatomical facts that the cross sectional topography of a nerve is unvarying; the motor fibers are arranged in gross bundles at the periphery and the muscular destination of these bundles is unvarying. Partial section of given bundle will cause a flaccid paralysis of the corresponding elements of the muscle leaving the remainder in a spastic condition. If the residual spasticity is correctly estimated when the nerve is sectioned the equilibrium with the opposing muscles will be restored.

The author has performed fifty-nine such operations in twenty-four cases, employing the median, sciatic, obturator and internal popliteal nerves. He

reviews the technique of nerve isolation in these four groups of cases and discusses the degree of sectioning necessary on the basis of the degree of spasticity. He concludes that the operation is of greatest value in spastic contractures of the adductors and spastic equinus.

Brief reports of the twenty-four cases are given.

P. R. BILLINGSLEY, M.D.

SYMPATHETIC NERVES

Ford, R. K. A Note on the Treatment of Chronic Ulceration of the Lower Extremities. *Lancet* 93, Oct. 1905.

Chronic non-specific ulceration of the legs and feet is disabling and requires prolonged treatment. Increased circulation to the extremity favors healing. Lencbe employed arterial sympathectomy in the treatment of Raynaud's disease, trophic ulcer, etc. Handley obtained the same but more permanent results by injecting alcohol into the vessel wall.

The author suggests the use of alcohol injections in all cases of chronic ulceration of the leg to increase the peripheral circulation and promote healing.

A case reported as that of a 55-year-old man who was admitted to the hospital with chronic ulceration of the right ankle and the dorsum of the right foot of several months duration. After the ulcer had been soaked in normal salt solution for period of ten days to remove the crusts, discharge, etc., the common femoral artery was exposed under chloroform anesthesia and its wall injected in each quadrant of its circumference with 5 per cent cocaine solution, about 0.5 ccm being used in all. The dressings were left undisturbed for four days. At the end of that time all superficial ulceration had healed. The patient was discharged cured in two weeks.

WILLIAM J. PICKETT, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Rowntree, C. Cancer of the Breast. *Rev M J*
9 3 4 747

Cancers of the breast constitute one third of all cancers occurring in the female. If an early operation is performed, there will be no recurrence in 30 per cent of the cases. In the remaining 70 per cent a well planned radical operation will generally relieve discomfort and prolong life, but the patient will eventually die of a metastasis.

If the results of the treatment of carcinoma are to be improved, persons with cancer must consult the physician earlier. Physicians must be more positive in their diagnoses, and operation must be performed at once by competent surgeon. The laity can be instructed regarding cancer through the medium of the public schools, by pamphlets and leaflets similar to those issued by the Cancer League and by newspaper publicity.

Because cancer of the breast is painless and harmless in appearance in the early stages, the diagnosis is often delayed or missed altogether until too late. Tiny cysts, adenomata, and cancers of the breast are so similar to one another that mistakes are made by the best diagnosticians and surgeons. A hypodermic needle inserted in a cyst will determine its nature, but in most cases the only positive method of differentiating an adenoma from carcinoma is microscopic examination. A point not usually brought out in the early diagnosis of malignancy is an almost imperceptible adhesion to the skin. In its earliest stages this can be made to appear by grasping the breast on each side of the suspicious area.

Of 60 of the author's consecutive cases of breast tumor fifty nine were malignant and forty one non-malignant. Doubtful tumors of the breast should always be considered malignant until proved otherwise. As only fifteen of these 60 cases revealed mastitis, the author believes that mastitis is not cause of cancer and does not call for amputation of the breast unless there is extensive cystic formation.

The proper treatment of breast carcinoma is radical removal. As rule the best anesthetic is ether combined with chloroform vapor. In the cases of old or feeble women, local anesthesia is best.

Radium is useless in all forms of breast carcinoma and in many other forms of malignancy. In the X-ray we have a valuable means of relieving pain and prolonging life. In the author's opinion, the deep therapy machines are little or no better than other roentgen ray machines.

P. CL. W. SWARTZ, M.D.

TRACHEA, LUNGS, AND PLEURA

Leib, A. Pulmonary Embolism Following the Filling of a Fistula with Beck's Bismuth Paste (Lungenembolie nach Füllsalbung mit Beck'scher Wundsalbe). *Beitr. Hs. Chir.* 9 3, curves, 55

The case reported, which was observed at the Hacker clinic, was that of a woman 24 years old who had been subjected to thyroidectomy seven weeks previously. Ten cubic centimeters of 30 per cent Beck's paste of bismuth carbonate were injected under moderate pressure into residual fistula after curetting of the tract. The patient immediately collapsed.

The X-ray showed emboli in both lungs in the region of the pulmonary artery. After the fifteenth day these began to disappear. When the patient was discharged on the thirty-eighth day the shadow in the lung had disappeared almost completely.

The author assumes that as a result of the curetting of the fistulous tract the paste entered the vein, reached the right side of the heart, and from there entered the lower circulation, where it became lodged. Recovery resulted because only a slight amount of the material was injected.

This case shows that in the filling of fistula Beck's paste must be used with the greatest care. Injury of the fistulous tract and the use of poulticed tips should be avoided.

COHEN (2)

Heiser, G. J. Lung Abscess. *M. records Med.* 923
VI, 270

From the standpoint of etiology lung abscesses may be divided into the following groups: (1) those secondary to tonsillectomy; (2) those secondary to the aspiration of foreign body; (3) those secondary to infectious processes elsewhere; (4) those secondary to surgical operations; (5) those secondary to benign or malignant strictures of the esophagus, trachea, or bronchi with perforation; and (6) those secondary to pneumonia.

At present it is believed by the majority of general surgeons that tonsillectomy is the most frequent cause of lung abscess. As rule in such cases the abscess is due to the aspiration of infected blood or particles from the tonsils. Nose and throat speculums regard embolism with infection through the blood and lymph streams as the most frequent cause. The type of anesthesia is an important factor. The great majority of lung abscesses follow tonsillectomy performed under general anesthesia. Therefore this is a problem of preventive surgery. The elimination of general anesthesia would eliminate the greater number of lung abscesses, but not

all. Students planning to do nose and throat work should have sufficient training in general surgery to make them familiar with surgical pathology, surgical technique, and the control of hemorrhage.

A study of the literature indicates that the aspiration of teeth, kernels of grain, and other foreign bodies is a frequent cause of lung abscess. Preventive measures should be taken against the aspiration of foreign bodies, and those that have been aspirated should be removed promptly. A patient who has aspirated a foreign body should be subjected to bronchoscopic examination as soon as possible.

Lung abscesses secondary to infectious processes elsewhere, such as liver abscesses, appendicitis, mastoiditis, etc., also have their preventive aspect in the way of early diagnosis and prompt treatment.

Lung abscesses secondary to clean surgical operations such as gastro-enterostomy, herniotomy and thyroidectomy are not rare and are complications justly to be feared. The mechanism of their production is varied. Some are due to the aspiration of saliva or vomitus. The basic lesion is either a bronchopneumonia or infarct which subsequently undergoes abscess formation. Preventive measures in these cases should be directed toward the careful administration of the anesthetic, gentle handling of the tissues, and greater attention to postoperative treatment.

Relatively few cases of lung abscesses are due to malignant disease, structure and other conditions of the esophagus, and malignancy of the bronchi. These primary conditions are very serious and the diagnosis is often made late. Care should be exercised in dilating benign lesions of the esophagus.

Formerly pneumonia was considered the most frequent cause of lung abscess. Preventive measures in cases of pneumonia must be outlined by the internist.

Lung abscess may occur as a single or multiple lesion, the incidence of the two types being approximately the same. Multiple lung abscesses are more difficult to diagnose, resist medical and surgical treatment, and are especially prone to occur following infectious processes elsewhere.

Advances have been made in the diagnosis and localization of abscesses. An accurate history, the findings of careful physical examination, the cough, and the character of the sputum are of great significance. The X-ray and especially stereoscopic X-ray plates, have contributed to the diagnosis and localization. The use of the bronchoscope is also of great aid.

Bronchiectasis and tuberculosis must be differentiated carefully as to operation on these cases when the lesion has been diagnosed as simple abscess is harmful.

About one-third of all lung abscesses heal spontaneously, but an acute abscess may become chronic and then will be far more difficult to cure. A suppurated lung abscess should not be treated expectantly longer than from six to eight weeks.

Artificial pneumothorax has been employed by various surgeons with varying results. Although this method has a certain field of usefulness, it is not applicable in the presence of adhesions between the visceral and parietal pleura or in the presence of a rigid abscess wall. It is of value as a diagnostic measure and as indicating the advisability of a one or a two stage operation.

Surgical drainage gives the best results in cases of single abscess in the acute stage. When there is accurate localization in such cases surgical treatment will result in a cure in from 75 to 80 per cent. The mortality is from 5 to 10 per cent.

Thoracoplastic operations are indicated in certain cases in which simple drainage and compression operations have failed. Procedures of this type are divided into two groups: (1) those which collapse and obliterate the abscess cavity and (2) those which extensorize the abscess cavity and cover its presenting surface with skin flaps or grafts.

Bronchoscopic irrigation of the abscess cavities is a palliative measure in cases of chronic abscess, but is not a curative method. Lobectomy should be considered only in those cases of lung abscess which have resisted other methods of treatment.

The author summarizes his experience in thirty-two cases of lung abscess. In fourteen of these the condition was found at autopsy. In forty-three of the remaining cases forty-five operations were done with a mortality of 8.8 per cent. The autopsy reports in eleven cases are given and the results in the thirty-five patients who survived are reviewed.

MILNE R. HOOD, M.D.

Santa, L. R. A Study of Lung Abscess by Serial Radiographic Examination. *J. Radiol.* 9:3, 1918.

In this article Santa reports the study of forty-five cases of lung abscess.

Lung abscess he defines as an acute inflammatory disintegration occurring within the lung and involving the lung substance itself as a result of the invasion of pyogenic organisms. This excludes abscesses due to the tubercle bacillus and all suppurative processes of the pleural cavity such as general or localized empyema and small collections of pus associated with a serofibrinous plastic pleurisy. Such condition presupposes an area of consolidation in the lung as a barrier to the invading organisms, and in this respect all abscesses may be considered as post-pneumonic consolidations thrown out to limit pyogenic infection similar to like process occurring elsewhere in the body. In this paper however the term pneumonia is confined to the acute consolidations of the lung commonly understood by this term, namely bronchopneumonia and lobar pneumonia.

In the series of cases studied there were six in which the abscess developed as a postoperative complication. In two, the condition followed tonsillectomy, in one a herniotomy, in one an appendectomy, in one a cholecystectomy, and in one

the rupture of the gall bladder. The case chosen to represent this group was first examined with the X-ray on the sixth day after tonsillectomy. At this time the consolidation was confined to the region of the hilum. Subsequent observations revealed rapid extension of the process toward the periphery. Soon after the onset an area of rarefaction was observed in the midst of the consolidation. Such an area may be seen at one examination and not detected in subsequent plates. It may be seen regardless of whether the abscess cavity has ruptured into the bronchus or not.

The radiographic findings were similar in all of the cases in this group. In the author's opinion the cause of the condition must be some other factor than aspiration of infectious material at the time of operation. While lowered resistance of the bronchial mucous membrane associated with the repeated aspiration of infectious material will explain some cases, in those in which the abscess develops six weeks or ten months after the operation there must be an added factor.

One case was examined within twenty-four hours after severe exposure to cold. Prior to the exposure the patient was apparently in perfect health. The X-ray revealed the characteristic findings. Rupture of the abscess, which occurred on the sixth day was followed by recovery.

In two cases the condition followed typical influenza in which there was no intercurrent pneumonia.

An abscess developed without apparent cause in eight cases. The initial symptoms were pain in the chest, dyspnea, fever, chilly sensations, and chill followed by profuse sweating. The X-ray findings were as described, and the area of consolidation rapidly receded following rupture and drainage of the abscess.

An apparent clinical cure is not an absolute cure. Occasionally there is a recurrence associated with the formation of multiple abscesses.

A striking similarity was exhibited by the cases reviewed. The X-ray evidence seemed to indicate that they all represented invasion by way of the bronchi and that in all of them the condition began as consolidation at the hilum and progressed peripherally. An area of rarefaction is often shown early in the disease. At this stage rupture and evacuation into the bronchus or into the pleural cavity may occur.

Of another group of thirteen cases, seven followed lobar pneumonia and in six the condition was associated with bronchopneumonia. These may be considered as of respiratory origin. In lobar pneumonia the disease is limited to one or more lobes. The temperature may fall by crisis only to rise again after short interval, or it may not fall by crisis but gradually assume septic type. In either event the consolidated area persists, at least in its central portion, and later an abscess cavity appears in its midst. In broncho-pneumonia the small peribronchial infiltrations become necrotic and form

small abscesses which coalesce to form larger abscesses in the mid lung portion.

Ten cases of lung abscess were of hematogenous origin associated with general septicemia. There were also three cases in which the condition resulted from regional lymphatic drainage from a septic process, and one case of direct extension of an infectious process into the interstitial tissues of the lung following rupture of the esophagus by malignancy.

In eight of the cases the histories were so indefinite that classification was impossible.

In seven of the forty-five cases there was involvement of the lower right lung. No particular type of involvement showed any special predisposition to spontaneous cure. Clinically, patient may appear completely cured while the X-ray examination reveals remaining disease which represents potentially grave condition. Any remaining pathologic process is an important factor for the rapid re-infection of the remaining lung.

The author's conclusions are summarized briefly as follows:

The cause of lung abscess may enter the lung by the respiratory system following some condition in which the local or general resistance is lowered or following lobar or broncho-pneumonia. It may enter it also by the blood stream from a septic process elsewhere in the body by invasion through the lymphatics and suppuration of the regional lymph nodes due to drainage of septic process, and by direct extension from the interjection of infected material into the interstitial tissues of the lung as result of destruction of the esophageal wall.

McMURRAY HAWCROFT M.D.

Berg, H. L. Empyema, an Analysis of 100 Cases in Relation to Treatment. *Minnesota Med J* 9 3, 71, 40

The author groups all cases of empyema coming on the average within two months of the onset of the condition as cases of acute empyema.

In the cases reviewed, the empyema followed lobar pneumonia in 56 per cent and influenza in 36 per cent. The number of leucocytes averaged 20,000.

In cases of primary disease which does not clear up with change in the chest findings, the X-ray is of great assistance in the diagnosis, but does not always show the empyema. Aspiration with needle is also of diagnostic aid and should be done early. The character of the fluid and the type of organisms are of importance in the choice of treatment.

The old belief that immediate operation should be done for empyema is abandoned during the influenza epidemic. As rule, however, pneumococcus empyema should be drained as soon as it is diagnosed. In early streptococcal empyema, aspiration is the treatment of choice and may be repeated. Drainage is usually necessary later.

Nitrous oxide is the anesthetic of choice unless it is contra-indicated.

Pus should be demonstrated by aspiration at the time of the operation, and the needle kept in the cavity.

Intercostal drainage should be reserved for very severe cases. Rib resection is the operation of choice. Closed drainage was done in ten cases. It usually becomes open in short time.

Drainage should be provided to the most dependent portion of the cavity which in recumbent patients is usually the posterior portion of the cavity.

In the cases reviewed, irrigation with Dakin fluid was used routinely with success. This helps to dissolve the fibrin and lessens the symptoms of infection. Bottle-blowing and lung exercises were also included in the postoperative treatment. The drainage tubes were shortened early so that they passed only through the thickness of the chest wall, but were not dispensed with until the cavity was practically obliterated.

In two cases the peritoneum was opened. Care must be taken in the low drainage cases to prevent this mishap. Seventy-six per cent of the cases were apparently permanently cured.

In the cases of chronic empyema the condition was caused by influenza in 46 per cent and by lobar pneumonia in 26 per cent. Most of the patients were in the fourth decade of life. Seventeen of the fifty cases had not been diagnosed until the process had been present from two to twelve months. Thirty-one cases had been operated upon previously. In twelve rubber drainage tubes were found. In one case previously diagnosed as empyema and operated upon, the condition was found to be dermoid cyst. The causes for the failure of the previous operation to effect a cure were (1) failure to drain to the dependent point, (2) too early removal of the tube, (3) early drainage of streptococcus infection of influenza, (4) greatly delayed drainage of large pus collection, (5) bronchial fistula.

Forty of the fifty cases were drained by rib resection. Four were not operated upon. Thirty-seven were apparently cured. In eight cases drainage was established at two points, all of these patients progressed well. Irrigation with Dakin solution in the after treatment was more successful than in the acute cases.

Plastic operations were done in six cases, but were for the most part unsuccessful.

A bronchial fistula tends to close if the empyema is adequately drained. MARCOS H. HOBART, M.D.

Cameron, H. C. and Osman, A. A. Empyema in the First Two Years of Life, with a Discussion of the Value of Immediate Resection of Ribs. *Lancet* 9, 3, 1931, 1097.

The authors report on fifty-two cases of empyema in children under 2 years of age. Thirteen of the patients recovered and thirty-nine died. The cases are classified into two groups. Group 1 included those in which the empyema developed after the pneumonia and the temperature curve of the empy-

ema was separate and distinct from that due to the pneumonia. These are called meta-pneumonic empyemas. The second group included the cases in which one temperature curve was superimposed upon the other as the empyema developed before the pneumonia had abated. These are called cases of syn-pneumonic empyema.

Of the thirteen cases in which recovery resulted, twelve were of the meta-pneumonic type. Of the thirty-nine which were fatal, thirty-four were of the syn-pneumonic type and five were not grouped because of deficiencies in the records which made definite grouping impossible.

Of the thirty-nine patients who died, twenty died following rib resection and drainage. The twelve cases of the meta-pneumonic type and the one case of the syn-pneumonic type in which recovery resulted were also treated by rib resection and drainage.

In the authors' opinion all meta-pneumonic cases should be subjected to operation as soon as the pneumonia has subsided. The operation of choice is rib resection. Cases of syn-pneumonic empyema should be treated by repeated aspiration and if necessary closed drainage.

RALPH B. BETTMAN, M.D.

HEART AND PERICARDIUM

Salmond, R. W. A. Artificial Pneumopericardium. *Arch. Radiol. & Electrotherapy* 9, 3, XVIII, 30.

In case with repeated large effusions in the pericardium in which paracentesis was performed at intervals, air accidentally entered the pericardial sac after one of the tapplings and permitted the visualization of a tumor mass which had been obscured on previous roentgen examinations. The patient was subsequently operated upon and the tumor found to be large cyst which was closely adherent to the upper left aspect of the pericardium and had been leaking into the pericardium.

While the case described is no doubt exceptional, the author believes that in certain suitable cases the artificial introduction of air or other gas into the pericardium might be of great diagnostic aid. The case reported would have almost certainly terminated fatally if the cyst had not been revealed by the roentgen rays and successfully removed.

ABRAHAM HARTZOG, M.D.

Gamberini, G. Pericardiotomy for Purulent Pericarditis (Pneumothorax per pericarditis purulenta). *Arch. Ital. di Chir.* 9, 3, VI, 69.

Gamberini reports a case of purulent pericarditis in a boy 7 years old in which, after punctures had failed, he did a pericardiotomy with drainage. Except for slight thoracic deformity the results were excellent.

Puncture is indicated in cases of indolent serous effusions of the pericardium, but when the effusion is secondary to some cause which cannot be removed pericardiotomy is better.

In acute serous pericarditis puncture can be used, but in the chronic type it is best to do a pericardiectomy leaving the pericardium open and closing the thoracic walls.

Puncture is commonly used in hämopericardium but in serous effusions of tuberculous origin the best results are obtained by pericardiectomy.

In purulent pericarditis puncture is absolutely contraindicated except as a preliminary to the operative stage. The mortality of puncture in these cases is almost 100 per cent, while pericardiectomy is followed by recovery in from 47 to 63 per cent of the cases. W. A. B.

ESOPHAGUS AND MEDIASTINUM

Bullrich, R. A. A Cause of Factor in Cancer of the Esophagus (Non-malignant factor determining the cancer del esófago). *Seminario médico* 913 222 183.

Bullrich finds that cancer of the esophagus is particularly frequent in the Argentine Republic and that it occurs with but few exceptions in the upper third of the tube the most exposed to injury. He believes the cause is the drinking of hot fluids such as the national beverage. He discusses the irritation theory of cancer and in this connection refers to an article by W. J. M. in which hot drinks are mentioned as cause of duodenal ulcer. W. A. BRYAN.

MISCELLANEOUS

Pisano, G. Subphrenic Abscess (Cisti peritoneali in comarca degli organi subfrenici). *Pubbli. Roma* 9 2 102 177.

Pisano classifies subphrenic abscess into the abdominal (antero-inferior), the thoracic (antero-superior) and the lumbo-retroperitoneal types.

The thoracic type of subphrenic abscess almost always causes respiratory pain, dyspnea, and

cough, and often a pleural reaction. The dyspnea is never severe. Pressure on the supraclavicular fossa on the side of the purulent collection is sometimes painful. At the level of the lower intercostal spaces there is subjective and provoked pain. The respiratory excursions on the side affected are limited, and the lung exhibits symptoms of compression. The heart may be displaced, and the area of dullness may be greatly increased.

In the abdominal type of abscess painful tamefaction is found in the hypochondrium and there is pain radiating to the shoulders and the epigastrium. Respiratory symptoms are absent. Vomiting and contraction of the abdominal muscles occur. On the affected side the diaphragm is immobile.

Cases of the lumbar type of abscess are characterized by spontaneous and provoked pain in the lumbar region, more or less diffuse tamefaction, and immobility of the diaphragm.

The local symptoms mentioned are present in addition to the general symptoms of fever etc. but the entire syndrome offers nothing especially characteristic and the diagnosis must depend to great extent on the exclusion of other conditions.

The mortality which ranges from 20 to 37 per cent in the cases operated upon, can be improved only by early intervention. The indication for early operation is the presence of pus.

Pisano gives the clinical histories of three cases. In the first and third, the abscess was extraperitoneal and in the left lumbar region, while in the second it was intraperitoneal and between the liver and diaphragm. In the first case the etiological factor was an acute osteomyelitis of the left transverse process of the first lumbar vertebra. In the second and third cases the condition was due to trauma.

The first case was diagnosed as paraesophageal retroperitoneal abscess, the second, as hepatic abscess, and the third, as a retroperitoneal abscess on the left side. All three patients made good recovery. W. A. BRYAN.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Becker A. The Treatment of Gangrenous Femoral Hernia (Ein Beitrag zur Behandlung der gangränösen Schenkelhernie) *Deutsche Zeitschr f Ch* 9 2, 1911, 28

The author reports thirty six cases of gangrenous femoral hernia operated upon during the past ten years. In twenty-four, the gangrenous gut was treated at the site of the hernia, in seventeen in which the gut was resected there were four deaths in three with gangrene at the groove of constriction closure was effected by suture with one death and in two in which suturing and anastomosis were done there was one death. In two cases prolapse of the incarcerated loop occurred. In twelve cases, laparotomy was performed above. Poupart's ligament resection of the gut in four closure by suturing and entero-anastomosis in one, entero-anastomosis without removal of the incarcerated gut from the hernial opening in five, operation discontinued because of hopeless peritonitis in two. The author comes to the following conclusions:

The treatment of gangrene at the site of the hernia should be attempted only when, without division of Poupart ligament, the incarcerated loop of gut can be brought forward sufficiently to allow the necessary procedure to be carried on in full view and in healthy tissue. In all other cases it is safer to approach intestinal loops running in and from the femoral hernia through an abdominal incision.

1. Closing off the gangrenous portion by suturing is of value only when it is certain that no disturbance of the nutrition of the intestinal wall will result, especially in the proximal portion of the gut.

2. The radical operation is dangerous if there is the slightest indication of infection of the serous find in the sac. CONSUMER (2)

Borchhardt, H. Biliary Peritonitis Without Perforation (Peritonitis biliaris Gallenperitonitis) *Berl H. Blat* 9 3, 1911, 300

After numerous experiments on animals Borchhardt concludes that it has not yet been possible to demonstrate true transudation of bile or a biliary peritonitis without perforation. All experiments have shown that wound of the gall bladder and even a wound involving both the gall-bladder and the common duct heals very quickly. Therefore the assumption is justified that in cases of biliary peritonitis the perforation in the biliary tract may not be found at operation or autopsy as it may have become healed. When the transudate does not have the appearance of bile but is a yellow brownish, or greenish exudate, the condition should not be called

biliary peritonitis or biliary transudate as it does not differ essentially from the peritoneal changes and exudates which have their origin in organs other than the biliary tract.

At operation, if the patient's condition will allow it, a quick examination of the biliary tract for possible perforation should be made. This should include the liver particularly its under-surface. Pressure should be made upon the gall bladder and the common duct to determine whether bile flows out at any point.

If no perforation is discovered, the gall bladder should be drained in order to prevent a possible bile stasis. Cholecystectomy is usually contra-indicated because of the patient's poor condition. When very great haste is necessary and no perforation is found, the operation may be limited to simple drainage of the port of the liver. HONORATA (2)

Vital Ace. A Solid Tumor of the Mesentery. Extirpation, Cure (Tumor sólido do mesentério extirpación radical curación) *Prog de la dis* Madrid, 9 3, 1911, 3

The case reported was that of a woman 52 years old. The symptoms were abdominal distention, slight pain in the periumbilical zone, persistent tramping followed at times by diarrhoea, and aches of the left leg. The clinical diagnosis was voluminous ovarian cyst with intestinal adhesions. At laparotomy the tumor was extirpated without great difficulty and the cavity tamponed. The patient made a rapid recovery.

The extirpated tumor weighed 4 kilos, 220 gm. Histologic examination showed no tendency to sarcomatous or epithelial degeneration. The patient is still well eight months after the operation.

W. A. BRIDGES

GASTRO-INTESTINAL TRACT

Forsell, G. Studies of the Mechanism of Movement of the Mucous Membrane of the Digestive Tract. *Am J Roentgenol* 9 3, 1911, 87

The folds of the mucous membrane of the stomach are supposed to be caused by passive folding in due to contraction of the muscular coat (musculi propria). Some of the folds of the mucous membrane of the intestine are attributed to the same cause but others are believed to be permanent anatomical structures. Forsell proved that this prevailing opinion is not correct as anatomical preparations and roentgenograms and photographs of the digestive tract of living beings demonstrated that the folds of the mucous membrane of the alimentary canal are formed by active movements of the mucous membrane itself.

Although the relief of the mucous membrane may vary in high degree in every part of the digestive canal, it is clear that the membrane in these parts has a certain tendency to form contraction forms typical for the part. In the mucous membrane form in the lesser curvature of the stomach there are no transverse folds even with the greatest shortening; the folds being longitudinal and the surface mammillated. The jejunum has a great tendency to form a high and complicated relief of mucous membrane than the ileum and the relief of the mucous membrane in the bulbous duodenum is of a different type from that of the folds in the other intestines. The motor forces of the mucous membrane are found, not in the muscular coat (muscularis propria) which makes the external form and width of the digestive tube but in the muscular mucosa.

The areas of the mucous membrane and the volume of its folds are probably regulated by variations in the filling of the vessels, while the number, position and form of the folds are determined by the muscular system in the muscularis mucosa.

The high and close folding of the mucous membrane may occur more easily with a simultaneous contraction of the muscular coat (membrana propria) but a definite degree of contraction of the muscular coat does not produce a definite corresponding relief of the mucous membrane on the coat. In a stage of contraction producing a certain width of the muscular tube may be associated with relief of the mucous membrane rising from a even surface to a very complicated folding.

According to the present general opinion, the fold of the mucous membrane has an elastic passy function, that of enlarging the digestive surface and preventing too rapid flow of the intestinal contents. The knowledge that they are not passy structures, but represent momentary state of movement must involve a new appreciation of their function. It is apparent that the complicated relief of the intestinal mucous membrane forms not only a good depository for the digestion and resorption of food, but also a mechanism with a subtle and ordered organization for regulating the chemistry of digestion. The muscular relief of the digestive tract and the special motor mechanism of the mucous membrane collaborate in the mechanism of digestion. (Aronson Harnack, M.D.)

Lucas, W. F. The Diagnosis and Treatment of Pyloric Stenosis. *Med. Clin. N. Am.* 9: 1, 1913, 293.

Lucas presents the following case history as the basis for an excellent discussion of hypertrophic pyloric stenosis.

The patient was full term normally delivered baby weighing 8 lb. 7 oz. Regurgitation of its feedings began the second day after birth. The following four days the vomiting increased but was not projectile in type. Ultimately everything taken was expelled.

A hypodermoclysis of 50 ccm. of salt solution and 50 ccm. of a 1 per cent glucose solution was given in the longitudinal sinus and the stomach was irrigated. On the tenth day after birth, projectile vomiting appeared and severe peristalsis was noted. An X-ray examination revealed the bismuth in the stomach four hours after its ingestion. None had passed the pylorus.

A Riollet-Rammstedt operation was performed the following day. The pyloric ring was found thickened, grayish, hard and of cartilaginous consistency. The operation required thirty minutes. One hundred cubic centimeters of Ringer's solution were left in the peritoneal cavity.

Four hours later the operation sterile after was given by mouth. The vomiting still persisted. Another hypodermoclysis of salt solution and glucose into the longitudinal sinus was then given. The second day after the operation fluids were introduced into the stomach by the Murphy drip through a small catheter. The following day normal breast feedings were resumed and well tolerated. Convalescence was uneventful.

In 1917 Armstrong published the first report on pyloric obstruction. Hirschsprung in 1918 reported 6 cases at meeting of the German Pediatric Society. The condition is generally attributed to spasm of the pyloric sphincter causing muscular hypertrophy of the circular fibers of the ring or to congenital hypertrophy of the muscular fibers of the sphincter. It occurs in from 1 to 4 per cent of infants. Eighty per cent of the cases are those of males. The condition is most common in the third or fourth week of life.

Presumably the child is born with congenital defect of the sphincter muscle. The pylorus is thickened and cartilaginous and has redundant mucosa. The irritation occasioned by food passing through the canal sets up muscular cramps which in turn causes an irritative spasm of the sphincter muscle.

The essential symptom is vomiting which may be either gradual or abrupt in onset and occurs immediately after feeding. Projectile vomiting and later severe peristalsis with gastric dilatation are pathognomonic of pyloric stenosis. Roentgen ray examination with bismuth meal and gastric lavage are of aid in estimating the degree of obstruction. Weight loss follows the continued vomiting and the stools appear meconium like consisting mainly of bile mucus, and intestinal detritus. With this combination of symptoms the diagnosis is easy. Regurgitation and vomiting caused in the newborn by air ingestion, irregular feeding and overfeeding are usually corrected easily. Projectile vomiting, weight loss and meconium stools never follow the simple irritative conditions.

The author believes that in early cases it is justifiable to try modern methods of infant feeding as most cases of spasm will be corrected by atropine treatment in conjunction with the feeding of thick

cereals. The administration of 1/400 gr. of atropin one-half hour before feeding should be followed by gastric lavage with a weak sodium bicarbonate solution. A feeding of 1 or 2 oz. of 6 per cent fine rice gruel mixed with an equal quantity of breast milk may be given through nipple every three or four hours. Hot applications to the abdomen may help to reduce the spasm. The infant must be given sufficient water and is watched carefully. If vomiting persists, the feedings should not be continued for more than one or two days, especially if the stenosis occurs in the first week of life.

In the operative treatment the Fredet Ramstedt operation has been found much superior to the old gastro-enterostomy which carried a mortality of about 40 per cent. Considering all cases both early and late the average mortality of the Fredet Ramstedt procedure is from 8 to 10 per cent but is practically nil if the operation is done within one week of the first projectile vomiting. The advantages of early operation consist in the reduction of postoperative shock, better wound healing, decreased danger of sudden death, and the prevention of secondary peritonitis. Postoperative feedings are greatly simplified. The results of few surgical conditions depend so largely on the skill and rapidity of the surgeon.

After the operation the child should be placed in a semi erect position, feedings should be begun four hours later and dehydration should be prevented by hypodermoclysis. After three or four days the child should be put to the breast and will nurse in the normal way. JOHN W. NUTZ, M.D.

Cutler E. C. and Newton, F. C. Perforated Ulcer of the Stomach and Duodenum. *Boston M & S J.* 1922, cxxxviii, 790

The late results indicate that the best treatment of perforated ulcer of the stomach is gastro-enterostomy with closure of the ulcer.

Perforation, especially in duodenal ulcer, occurs more frequently in males than in females.

In most cases a history of indigestion or other abdominal complaint is given, but in some the perforation is the first sign of ulcer.

The interval of time elapsing between the perforation and operation is of great importance in the prognosis. Recovery results in most of the cases operated upon before twenty-four hours. In those in which recovery results when operation is performed later the ulcer is usually of the walled off variety.

Gastro-enterostomy apparently does not increase the risk whatever the time interval, and the convalescence following this operation is less stormy than that in cases treated by simple suture. The late results are also more satisfactory and the secondary operation is unnecessary.

In any case under twenty-four hours old a gastro-enterostomy is desirable unless it is contra-indicated by some special condition.

MARSH H. HOBART, M.D.

Downes, W. A. Hour-Glass Contraction of the Stomach. *Surg Clin N Am* 1923, iii, 243

Downes reports a case of hour-glass contraction of the stomach due to a penetrating ulcer on the lesser curvature. As the patient's condition was very poor the simplest operation that would meet the requirements was desirable. A gastro-gastrostomy of the anterior walls of both pouches and a pyloroplasty by Finney's method were done. The patient was discharged from the hospital on the twenty-eighth day.

In conclusion the author states that the ideal operation in this condition if the patient's condition will permit it, is resection of the stomach.

I. EDWARD BRONKOW, M.D.

Melssen, N. A. The Results of the Medical Treatment of Gastric and Duodenal Ulcer. *Acta med Scand* 1919, 3, 171a.

In the cases reviewed the diagnosis of ulcer was based on the occurrence of hæmatemesis, the presence of an hour glass contraction, or the findings of an exploratory operation together with the other characteristic symptoms and signs of the lesion. The patients have been under observation for periods ranging from two and one-half to twenty years. During this time no symptoms of other diseases which might cause hæmatemesis or melæna have been noted. The ultimate result in 95 per cent of the cases is known.

It was found that when a patient suffering from gastric ulcer became symptom free as the result of treatment and developed a recurrence later the recurrence appeared before the lapse of three months in one-third of the cases and before six months in one half. The frequency of recurrence decreases considerably in cases which pass safely into the second year and at the end of the second year suddenly decreases markedly.

The relationship between the duration of the symptoms before the treatment and the patient's condition after the treatment is shown in the following table.

RELATIONSHIP OF DURATION OF SYMPTOMS TO RESULTS

Duration of symptoms before treatment	Permanently cured	Temporarily cured	Permanently cured	Temporarily cured	Permanently cured	Temporarily cured
Less than 1 month	60	30	60	16 7	76 7	3 5
1 to 3 months	33 3	20 8	54	6 7	70 8	29
3 to 6 months	26 3	6	36 9	1	57 9	43
6 to 12 months	20 7		26 7	26 7	46 7	53 3
1 to 2 years	7	8	10 8	8	6	74 4
Over 2 years	5 2		5 8	7 6	9	77

It is seen that the percentage of those permanently cured by treatment, plus those permanently cured after a relapse, decreased as the duration of the

in symptom increased and that the percentage of cases benefited was not influenced by the duration of the symptoms before treatment. The percentage of poor result increased with the duration of the symptoms.

The location of the ulcer, the type of symptoms, the prolongation of the treatment for a longer period of time, and the manner in which the ulcer reacted to the treatment seemed to have no relationship to the subsequent course.

A ulcer near the pylorus causes the more severe symptoms on relapse. It is probably best to treat them surgically. Benign ulcers of the corpus, which cause only mild symptoms on relapse, are best treated medically.

The author states that it is doubtful whether there is any danger of cancerous degeneration of the ulcer, that at a year it is so light as to be of no practical importance. Perforation and fatal hemorrhage occur comparatively seldom in cases of clinically benign chronic ulcers. This risk in the individual case is quite obscured by the risk which can be fairly well estimated, namely the chance of becoming an invalid.

With this method of treatment was used in three cases. Briefly this is as follows:

Food is withheld for from 1 to four days, but one or two strict nuns are given liver hemorrhage or severe symptoms.

1. During the first week thereafter 1 liter of milk and two eggs beaten together are given the first day, and the quantities of these food are then increased until 3 liters of milk and six eggs are taken.

2. In the second week of treatment rice pudding and 50 gm of roasted scraped meat are given in addition.

3. In the third week the diet of the second week is increased by the addition of sugar pudding, oatmeal fruit juice, sugar, flour, and tea.

4. In the fourth week baked fish, salt bread, oil, butter, and, with general improvement, light meals are given.

5. In the fifth week the milk and eggs are gradually decreased.

6. After the bland diet is tolerated, it is given for one-half to one year.

7. The patient is kept in bed on a light diet and boiled meat are tolerated.

ROBERT M. GIBBY, M.D.

Alvarado, R.: Three Cases of Syphilis of the Stomach (*Trecca chelada della stomaco*). *Ist. Med. Chir.* 9, 3, 4.

One of the cases reported as that of a man 45 years old and two are those of women 29 and 27 years old. In the first case the author performed a simple exploratory laparotomy for the removal of a mass for histologic examination. The tissue was taken from neoplastic mass on the lower curvature of the stomach. Examination disclosed no neoplastic elements. The patient had a strongly

positive Wassermann reaction and improved rapidly under a syphilis treatment.

In the second case gastro-enterostomy was done for pyloric stenosis and a piece of tissue was removed from a tumor mass in the vicinity of the pylorus. The histologic examination of the specimen suggested syphilis. On being questioned the patient then admitted having had a ulcer of the labium inferius. The Wassermann reaction was found strongly positive. Salvarsan treatment resulted in a marked and rapid improvement of the gastric condition.

In the third case an exploratory laparotomy with excision of tissue from justa-pyloric tumoraction on the greater curvature of the stomach was done. Histologic examination showed but slightly compact connective tissue with accumulations of lymphoid cell and the border of neoplastic elements. The Wassermann reaction was positive. Under treatment with salvarsan the patient improved temporarily but later was obliged to return to the hospital because of evidence of pyloric stenosis. A pyloromyotic reaction, which was then done, afforded the opportunity for careful anatomico-pathologic examination. There was complete absence of epithelial infiltration. Elements the mucosa of stomach is mucous are almost normal but the submucosa greatly thickened and showed lymphocytic invasion especially around the blood channels. W. A. BRYAN.

Patocchi, G.: Primary Sarcoma of the Stomach and Transverse Colon. The Traumatic Genesis of Tumors (*Sarcoma primitiva dello stomaco e del transverso del colon*). *Pal. Med. Rome* 9, 3, 122, 123, 124, 125.

Patocchi gives the clinical history of a case of primary sarcoma of the stomach in a man 55 years of age. About six months before he was examined the patient had suffered a severe contusion of the lower ribs, but there had been no vomiting or spitting of blood. The pain was localized chiefly in the epigastric region. Since the accident the patient had lost his appetite, had become emaciated and had complained of nausea.

An x-ray examination showed only slight dilatation of the stomach without any filling defect or an (tumor) form except that the pylorus appeared somewhat displaced to the right. Death occurred 11 months later.

At autopsy the entire lesser curvature and the neighboring part of the anterior gastric wall as found occupied by an enormous mass. The neoplasia reached its maximum development (about 3 cm in thickness) over the lower curvature. No noteworthy changes were found in the intestine. The anatomical diagnosis was primary tumor of the stomach, chiefly secondary tumors in the liver, perigastric glands, and diaphragm. Death was due to gastric hemorrhage. The microscopic diagnosis of the tumor as lymphosarcoma.

W. A. BRYAN.

Carr L., and Pauly N. Deflection of the Biliary and Pancreatic Secretions by Jejunojunctionostomy as a Complement of Gastro-Enterostomy or Gastrectomy (La dérivation des sécrétions biliaires et pancréatiques par jéjunojunctionostomie comme complément de la gastro-entérostomie ou de la gastrectomie) *Brazillia med.* 9 3 m 57

When the gastric tube brings up from the fasting stomach a large amount of alkaline fluid with a bile reaction, a pathologic condition may be inferred. When function is normal, the presence of bile and pancreatic secretion in the stomach is exceptional. That it is not badly tolerated, however, is demonstrated by the cases in which a gastro-enterostomy gives perfect functional result and by the fact that in certain cases of atresia due to obstruction the gall bladder may be anastomosed to the stomach.

In the cases of nervous patients whose gastric mucosa, being hypersensitive, does not tolerate the unaccustomed contact of bile, a series of morbid manifestations are noted which end in biliary vomiting and the catheter withdraws a quantity of alkaline fluid of biliary character.

Medical treatment in such cases is difficult and a definite cure is obtained only by operation. The operation described by the authors and recommended by them for these cases may be performed as a supplement to gastro-enterostomy but on account of its simplicity and beneficial effect they believe it should be done as a prophylactic measure at the time of the primary operation. The technique consists in closing the afferent loop (when the gastro-

enterostomy is made near its outlet) with heavy silk sutures and then uniting it above to the efferent loop by entero-anastomosis.

Vicious circle is impossible: the gastric contents cannot reflux toward the duodenum, and the bile and pancreatic secretion cannot reach the stomach, being turned into the efferent jejunal loop. The normal physiological conditions are thus approximated as much as possible.

The method somewhat resembles the Roux gastro-enterostomy in Y but has two important differences: (1) it is easier and less dangerous, and (2) it allows a large orifice to be made, while with the Roux method the gastro-enterostomy opening corresponds to the diameter of the afferent loop which is greatly restricted and becomes smaller as the result of cicatrization. W. A. BRYMAN

Lockwood A. L. Surgical Possibilities in Traumatic Rupture of the Intestine. *Canadian M. Ass. J.* 9 3 xiii, 3

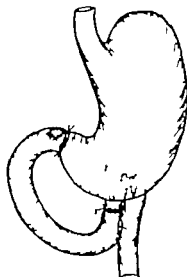
Rupture of the intestine may be caused by sharp blows on the abdomen, compression or crushing, indirect force, or sudden increase in the air pressure within the lumen of the bowel. The most common cause is direct compression of the intestine against the vertebral column, the promontory of the sacrum or the pelvic crest. The rupture may be complete or incomplete. As a rule the small bowel is completely severed while the large bowel is only partially ruptured. Lacerations of the small intestine tend to be localized to the fixed portions. Lesions of the duodenum and colon are frequently retroperitoneal.

The author has collected the reports of 65 cases of traumatic rupture of the intestine occurring in civil life. The small bowel was the site of the rupture in 90 per cent; in the 10 per cent in which the large intestine was ruptured, the cecum, transverse colon, and pelvic colon were involved in the order named.

The symptoms of intestinal rupture depend on a great variety of conditions such as the nature and site of the lesion, the presence of lesions in other viscera, the patient's resistance, the fullness of the bowel, the treatment, the time since the injury, the ingestion of fluids, and the administration of morphine. They may appear immediately or late. They may be greatly delayed even when there is complete rupture of the intestine.

Primary shock appears almost immediately after the rupture. Apart from hemorrhage, the onset of shock and its severity do not constitute an indication of the extent of the rupture. Primary shock occurred in 80 per cent of a large series of cases.

The temperature is usually subnormal, the pulse weak and rapid and the respiration of the thoracic type. With the reaction from the shock the temperature rises. If it falls again and there is increasing rapidity of the pulse rate, the condition is serious. A high temperature usually occurs in late cases and indicates grave peritonitis.



Closure of the pylorus.

Duodenal ulcer.

3. Closure of the afferent loop (silk suture).

4. Posterior gastro-enterostomy.

5. Enteric anastomosis of the afferent and efferent loops.

Vomiting is a very important symptom and invariably present. It occurs early if the lesion is located high up in the small bowel.

Pain and tenderness aside from the superficial bruising is a well localized deep pain often radiating to the loins or deep pelvis.

Abdominal rigidity either general or localized over the area of injury is typical and present in practically all cases. Progressive board-like rigidity indicates serious trouble frequently a spreading peritonitis.

Abdominal distention with tympany may be of the paralytic type. Increasing distention eight to ten hours after the injury is a grave sign.

The absence of liver dullness is evidence of serious trouble and worthless for early diagnosis as it occurs only in late cases after the time for surgical operation has passed.

Surgical emphysema occurs in associated retroperitoneal rupture of the duodenum and colon.

The extreme importance of the early diagnosis of rupture of the bowel cannot be exaggerated. A delay of one hour at the critical time will destroy any chance of surgical aid. It is important to exclude thoracic, renal, and spinal injuries. The author operates on all persons who following blow on the abdomen, a crushing injury, or fall, complain of severe abdominal pain which lasts for more than four to six hours and is associated with tenderness, vomiting, rigidity and an increasing pulse rate.

Practically all cases of rupture of the bowel are fatal unless they are operated upon. Lesions of the large bowel are obviously more dangerous because of the greater danger of peritonitis. Just as in cases of perforated gastric ulcers, the most important element in the prognosis is the time elapsing between the injury and the operation. The prognosis is best when the operation is performed within six hours of the injury. In cases operated upon after twenty hours the chance for recovery is slight.

Of twenty-seven cases of intestinal rupture seen by the author in the period from 1904 to 1908, fourteen came too late for surgery and are fatal. In thirteen operated upon there were five recoveries. Rupture of the bladder and retroperitoneal injuries with kidney lesions complicated two fatal cases each.

Operation should be performed at the earliest possible moment after the subsidence of shock. The shock should be combated by blood transfusion, heat, morphine and saline solution. At operation in the author cases anesthesia is induced with nitrous oxide and infiltration of the abdominal wall with novocaine. A wide incision is made over the site of injury. First, the site of rupture is explored and all perforations found are closed. The small bowel is then examined from the ileocecal junction to the stomach and the large bowel from the caecum to the rectum. The spleen, kidneys, stomach, pancreas, liver, bladder and rectum are palpated. Multiple ruptures occur in 30 per cent of cases.

Resection of the bowel should be avoided and is rarely necessary.

Catgut No. 6 for the first layer followed by Lembert sutures will suffice for the small bowel. If the large bowel the layers of catgut sutures are reinforced with linen or silk. Oriental tays should be tacked over the site of repair. If resection is necessary an end-to-end anastomosis is preferable in both the large and the small intestine. The author completes the toilet of the peritoneum by mopping out the abdomen with gauze wet with saline solution. Irrigation and lavage of the peritoneum are dangerous. In the author's cases a hypodermoclysis of saline solution is given and 100 cc. of sodium bicarbonate and glucose is administered by rectum every four to eight hours for forty-eight hours. Morphine is prescribed to slow the respiration and inhibit peristalsis.

In the last cases the only treatment possible is suprapubic drainage, the administration of morphine and hot applications to the abdomen. These cases are usually fatal. JOHN W. NICHOLS, M.D.

Schlæpfer, K. Combination Ileus. *Ann. Surg.* 9, 3, 1909, 524.

Combination ileus has been defined by Hocheweg as the coincidence of acute obstructions of the intestinal tract, the primary obstruction becoming evident clinically only on the development of the secondary obstruction.

The author believes that combination ileus should be suspected in any case of incarcerated hernia (pseudo-locarceration) in which the history and the findings on examination are not typical of complete acute intestinal obstruction, and if at operation the size and vascular condition of the afferent and efferent loops of intestine and adjacent mesentery are unusual.

A laparotomy with thorough examination of the gut will expose the primary factor in the obstruction. This is generally a mechanical obstruction, either an obstruction (gall stone, coprolith, new growth) or strangulation (hernia, band, volvulus, diverticulum). In cases of peritonitis with paralytic of the intestines dynamic ileus may be factor. In second group of cases both causes are than the abdomen. A presumptive diagnosis of acute intestinal obstruction is a indication for laparotomy.

When one cause of obstruction has been removed thorough examination and palpation should be made to exclude the presence of second hidden primary cause or second superimposed cause of the acute obstruction. In every case of combination ileus prompt surgical interference is indicated. The earlier the operation is performed the better the prognosis. The high mortality in these cases is due to the fact that at the time of the first operation only one factor in the obstruction is removed and second operation is necessitated by the persistence of the symptoms of acute intestinal obstruction when the patient was in much weaker condition.

LEWIS C. ROSSIGNOL, M.D.

Williamson, C. S. and Brown, R. O. The Permeability of the Intestinal Mucosa to Certain Types of Bacteria Determined by Cultures from the Thoracic Duct. *Am J M Sc* 93, 480

The purpose of this investigation was to learn whether bacteria introduced into the intestinal canal under normal conditions and under conditions comparable to those of operative procedures could be recovered from cultures of lymph taken from the thoracic duct.

Observations were made on dogs with thoracic duct fistulae. The technique for making the thoracic duct fistula was a modification of that employed by Biedl. After the fistula was established, bacillus prodigiosus was chosen as the most satisfactory organism for the purpose of the study. The bacteria were grown either on dextrose agar or in bouillon cultures. As a rule, forty eight hour cultures were used for injection. The agar cultures were washed off with salt solution and fed or injected as a salt solution suspension. Bouillon cultures were used infrequently but when employed were either fed or injected. Control cultures of the suspensions were made before injection to determine whether the organism was viable. The amount of the suspension given varied from 50 to 30 c.c. for each dose.

Group 1: This group of experiments consisted of the administration of the organism to fasted animals and the culturing of the thoracic duct lymph to determine whether the ingested bacteria could be recovered.

Group 2: The animals in this group of experiments, in addition to being fasted, were given a purge of castor oil or magnesium sulphate to determine the effect of irritation on the passage of bacteria from the intestinal canal to the lymph stream.

Group 3: This group of experiments was made to determine whether diet might be a factor in the passage of bacteria from the intestinal canal to the lymph stream. The diets given were rich in fats, proteins, or carbohydrates.

Group 4: From the results of the previous groups of experiments it seemed that the bacteria might be destroyed by the acid gastric juice. To obviate this possibility, loop of jejunum 5 to 30 cm. below the ligament of Treitz was brought up and sutured beneath the skin ten to twelve days before the experiment was performed. The wound healed in a few days. Then after the thoracic duct fistula was established, to ensure injection the bacterial suspension directly through the skin into the jejunum by means of hypodermic syringe.

Group 5: In this group of experiments an attempt was made to determine the effect of drying and trauma on the passage of bacteria from the lumen of the intestine into the lymph stream.

Group 6: The experiments in the preceding group, while similar, were not comparable to operative procedures on the intestinal canal. Therefore in the sixth group of experiments intestinal operations were done, and the bacterial suspension was

injected at the completion of the operation. Cultures were then made as in the preceding experiments.

Group 7: In this group of experiments cultures were made from the thoracic duct lymph after the injection of the bacterial suspension into the colon following a cleansing enema.

Group 8: In this group of experiments cultures were made from the thoracic duct lymph after the injection of the bacteria into the peritoneal cavity. There were eight experiments. Positive cultures were obtained in four in from two to four hours after the injection. This group of experiments was made as control for the other groups.

The conclusions derived from the study are as follows:

It is not possible to recover bacillus prodigiosus from a fistula of the thoracic duct by culture of the lymph after the ingestion of the organisms.

The negative results were not influenced by diet or by trauma due to exposure of the viscera or to standard operative procedures.

3. Cultures of the feces for the ingested organisms were negative.

4. Cultures obtained from the thoracic duct following the injection of the bacteria into the peritoneal cavity were positive in 50 per cent of the experiments of Group 8.

Lemon, W. S. The Status of Present Day Methods of Examination in the Diagnosis of Intestinal Tuberculosis. *Missouri Med* 923, 1, 300

It is well-known fact that tuberculosis of the intestine may result from the ingestion of food containing tubercle bacilli. Such an infection is classified as primary and is much more common in children than in adults. Secondary tuberculosis of the intestine is almost always associated with disease of the lungs, although rarely it may appear as a result of peritoneal tuberculosis or tuberculosis elsewhere in the body. It has been estimated by various authors that secondary intestinal involvement occurs in more than 50 per cent of all cases of pulmonary tuberculosis.

Stengel divides tuberculosis of the intestine into three types: ulcerative, stenotic, and chronic hyperplastic. Of these the ulcerative is by far the most common and the stenotic and hyperplastic are relatively rare.

While all clinicians agree that the incidence of intestinal involvement among tuberculous patients is high, two facts make an early positive diagnosis difficult: (1) There may be no symptoms referable to the intestine, and (2) such symptoms as appear may occur only late in the progress of the disease. Lemon feels that the onset of the recognizable intestinal disease gives almost as unfavorable an outlook as large bowel involvement.

The late symptoms of tuberculous enteritis are merely those common to enteritis or ulceration from non-tuberculous disease. However if the background of the tuberculous patient is kept in mind, these symptoms become of significance and even

earlier signs may be noted. It is recognized in an indefinite way that the patient who should be doing well is doing poorly. Constipation or diarrhea may set in, or these conditions may alternate. In general it may be inferred that diarrhea is proportionate to the extent of involvement of the large bowel, while constipation characterizes those cases in which the small bowel is most involved. Oiler and Starr mention hemorrhage as an important sign, but this was absent in Lemon's series.

Among the signs found on physical examination the most important are the sense of mass formation, an indefinite induration in the cecocolonic area, and a feeling of general resistance and pain on deep pressure causing recognizable rigidity in the muscles of the abdominal wall. Distention has been less commonly noted, and active peristalsis was observed only with symptoms of obstruction. The presence of a draining sinus or local fistula following an appendectomy is an important finding, but in such cases a search should always be made for the ray fungus before a diagnosis of cecocolonic tuberculous is made. A proctoscopic examination in these conditions is often of the greatest value.

That examination of the stool for tubercle bacilli does not materially aid in the diagnosis of tuberculous enteritis is seen from the fact that 75 to 95 per cent of all cases of active pulmonary tuberculosis with bacilli in the sputum likewise show bacilli in the stools.

While roentgenological examination is undoubtedly the most precise method at our disposal, Carman finds that interpretation is not without difficulty because there are no pathognomonic roentgenological signs. The filling defect and the absence of the normal barium shadow in the cecocolon are signs of every ulcerative process. If, however, the examiner bears the patient's tuberculosis in mind, such findings take on the certainty of diagnosis. In fully 85 per cent of all cases of intestinal tuberculosis the lesions are found in the ileocecal area.

The author's conclusions are summarized as follows:

The diagnosis of intestinal tuberculosis is made on circumstantial evidence collected from the history of the aliment, the examination of the patient, and the laboratory findings. The examinations include a proctoscopic examination, a study of material obtained through the proctoscope, a stool examination, and roentgenological observations.

Downes, W. A. Perforated Duodenal Ulcer in Child. *Ann Surg* 39:3, 1924, 750

In the case reported the condition began with vomiting, but without pain or fever. All food by mouth was stopped and nothing was given but water. The vomiting ceased and there was slight improvement. On the morning of the sixth day sudden severe pain occurred in the upper abdomen and a large amount of brown fluid was vomited. The pain and vomiting continued and the temperature rose to 103 degrees F. The blood count

revealed 80,000 leucocytes and 95 per cent polymorphonuclears. An indefinite mass was palpated in the upper right quadrant.

Exploratory laparotomy revealed a large quantity of bile stained fluid in the peritoneal cavity and a perforation $\frac{3}{4}$ in in diameter on the anterior surface of the duodenum just distal to the pylorus. The perforation was closed with a purse-string suture of chromic gut reinforced by interrupted sutures. All fluid was aspirated and the wound closed without drainage.

Convalescence was uninterrupted. On the seventeenth day after operation the X-ray revealed normal stomach function.

CARL D. NIMMO, M.D.

Brendolan, G.: A Leiomyoma of the First Portion of the Jejunum (*Leiomyoma della prima porzione del digiuno*). *Falchia Rome* 30:3, 1913, 258, 259, 260.

Tumors arising from the connective tissue of the intestine are rarely reported in the literature. This may be due to the fact that, apart from their lesser frequency the symptoms they produce are much less severe than those of epithelial tumors.

The case reported by Brendolan was that of a man aged 34 years who, four months previously had an attack of intense pain in the left hypochondrium. Later a swelling developed in the same area, the abdomen became tense and defecation was painful, but the feces showed neither blood nor mucus. This abdominal condition continued for twenty days, after which the pain accompanying defecation became localized in part of the intestine and then diminished.

On examination, a smooth, mobile tumefaction, the size of a fist, was found under the left costal margin and extending most to the umbilicus.

After the usual organic and other clinical tests the site of the tumor was believed to be the posterior portion of the omentum. It is usually considered pathognomonic of such omental tumors that when the stomach and transverse colon are filled, they disappear or decrease in size. This sign was observed. The pre-operative diagnosis was benign tumor, probably cystic and pedunculated, of the posterior portion of the omentum.

At operation, a round tumor the size of the head of a fetus and full of blood was found implanted upon the upper wall of the first portion of the jejunum about four fingerbreadths from the ligament of Treitz. This growth was removed with the portion of the intestinal wall on which it was implanted. The patient made an excellent recovery.

Histologic examination of the tumor showed that it was leiomyoma arising from the intestinal musculature. The overlying mucosa was undergoing degeneration.

The author reviews the literature referring to leiomyomata of the gastro intestinal tract. Steiner collected fifty six such cases in 1899 but many of them were not proved cases. In 1907 Krag, in 22

article on benign tumors of the intestinal tract, mentioned only thirteen cases of myoma proved by histologic examination. Brendolan believes that while such tumors may have a vascular origin the majority arise from the muscular part of the organ on which they are implanted and in the case of the intestine from the muscularis mucosae. The chief conditions with which such a tumor may be confused are cancer and simple and tuberculous inflammatory tumors. The chief danger arising from such growths is their tendency to sarcomatous degeneration. The only treatment is operative removal.

W. A. BARNMAN

David, V. C. Sliding Hernia of the Cecum and Appendix in Children. *Ann Surg* 93: 137, 1931.

A review of the literature shows that sliding hernia in children is not a common condition and that it is generally thought to be associated with rotation of the cecum and the descent of the testicle during intra uterine life.

The cecum develops from the large bowel and lies up beneath the liver. As fetal life progresses, axial rotation takes place and the colon descends into the lower abdomen. Fusion occurs between the peritoneum of the ascending colon and the posterior parietal peritoneum, fixing the large gut in place. As pointed out by McBurnick, fusion of these two structures is sometimes incomplete, allowing certain mobility of the ascending colon and the cecum.

The testicle descends to the inguinal canal about the fifth month of fetal life. It is preceded into the scrotum by the tunica vaginalis. If the descent of the testicle were the cause of the hernia, if the cecum and the sac, the testicle could have drawn the cecum and part of the parietal peritoneum down into the scrotum. The author believes that if such a hernia were the only cause an undescended testicle could be the result.

The fusion of the cecum to the parietal sac should not be considered the result of fetal peritonitis as this would cause evidence of inflammation in the surrounding structures. The author favors the suggestion that fusion of the wall of the cecum to the parietal surface of the vaginal process takes place in the same fashion as fusion of the lateral wall of the ascending colon to the posterior parietal peritoneum.

D. W. describes three cases in which the cecum was found to be part of the posterior wall of the hernial sac. The treatment consisted in dividing the sac long enough and freeing the cord. The anterior half of the sac was trimmed away, the posterior cecum was returned to the abdomen through the internal abdominal ring, and the opening was closed with pursestring suture.

In none of the cases was there any connection between the testicle and the bowel nor any vascular connection which might be considered a placental vasculature.

WILLIAM J. PICKETT, M.D.

Sasayaki, B. Nerve Disturbances in the Abdominal Wall in Appendicitis (Nervöse Störungen der Bauchwand bei Appendicitis). *Polak per Ich* 9: 1, 8, 6.

The different evaluations of Head's zones with regard to abdominal diseases caused the author to draw his own conclusions on the basis of a careful study of acute, subacute, and chronic appendicitis. Sensory perception was tested by means of touch, pricking with needle, pinching with the fingers, and the application of cold and hot test tubes, affected parts of the body being compared with parts free from the disease, the hypogastric region with the epigastric, the abdomen with the thorax, and the extremities. This examination was not made on very nervous persons.

Of eighty patients with appendicitis sixty (75 per cent) showed variations in the sensibility of the skin within a region bounded above by the umbilical line, laterally by the anterior axillary line, the spine, and the beginning of Poupart's ligament; below, by a line three to six fingerbreadths below the umbilicus, and medially by the margin of the rectus. There were, however, occasional variations from this rule, particularly in an upward direction. Of the various sensations, pain caused by pinching showed the greatest variation.

The author comes to the conclusion that hyperesthesia is most common in acute and subacute cases, and hypesthesia in chronic cases.

With regard to reflex muscle tension he concludes that the disturbance lies in the motor section of the reflex arch rather than the sensory section. He therefore believes that Head's zones are not entirely dependable in diagnosis although they may be of some significance.

JURANS (2)

White, F. W. The Clinical Importance of the Chronic Changes in the Appendix Which Are Discovered by the Roentgen Ray. *Boston M & S J* 93: 123, 1931.

As a preliminary to the determination of their clinical importance, the author discusses briefly the various roentgen signs of chronic appendicitis.

This term he believes is more or less a misnomer as it refers not so much to a chronic inflammation of the appendix as to the result of recurrent previous inflammation which caused chronic functional disturbance. The direct roentgen signs in the appendix are tenderness, fixation, kinking, change in shape, abnormal position, lack of filling, slow emptying, beading, and adhesions in the ileocecal region. The indirect signs are pyloric spasm, gastric residues, and ileal stasis. Most of the signs are suggestive rather than definite, and several, the more the better, are needed for a diagnosis (taken, of course, with the clinical evidence). If there is no tenderness and no fixation, the other signs count for little.

While tenderness is not strictly a roentgen sign, the roentgen examination permits of exact localization of such tenderness and if this coincides strictly with the visualized appendix it constitutes

the best single sign of pathology. As regards filling, there is wide variation of opinion. The author believes that when the appendix is not seen, little can be said about it and that this fact justifies the conclusion that its lumen is obliterated or it is retrocecal. The nature of the filling, whether it is irregular, interrupted, beaded, or segmental, is not definite criterion of pathology as it may be of purely physiological origin. Delayed emptying, i.e. much over thirty-six hours or after the cecum has emptied, suggests poor drainage and hence is potentially a source of danger.

Fixation is important, especially if it involves one part of the appendix, the tip or median part, and causes kinking and deformity; this indicates adhesions from previous inflammation. Fixation or kinking must be permanent, and not merely apparent or accidental, to have any value in diagnosis. Kinking and angulation are usually due to adhesions, narrowing, scar tissue, and obliterative changes. Irregular dilatation may be due to obstruction. Delay in emptying and fermentation of contents has no diagnostic importance and variations of shape are important only if constant. Likewise, anomalous position is significant only if it is fixed.

Of indirect signs, slow emptying of the ileum with readiness of the barium meal for twelve to twenty-four hours or more is frequently the result of obstructive delay from adhesions, but there are also other causes. The gastric signs, such as spasm of the pylorus and duodenum and stasis, are very inconstant and unreliable. Incompetency of the ileocecal sphincter has little relation to the appendix and is too common in the absence of chronic appendicitis to have any diagnostic value. Adhesions involving the ileum, colon, and pelvic organs indicate congenital veins or local inflammation; previous appendicitis is a common cause.

In interpreting the various roentgen signs in individual cases as indications for operative interference the greatest caution is essential. In an operative group, different groups of signs were always found, namely: constant tenderness of the appendix itself, sharp kinks with fixation, marked delay in emptying associated with tenderness, and history of local pain or tenderness. The diagnosis has been made chiefly on the basis of direct signs in the appendix itself or adhesions. The most important direct signs have been tenderness of the appendix, constant changes in shape, fixation, and abnormal position. The less important were the filling and emptying of the appendix and signs of fecal residues.

ANASTAS HANNOU, M.D.

Jackson, J. N. Acute Gangrenous or Perforative and Suppurative Retrocecal Appendicitis. *South M. J.* 1923 vol. 8.

The appendix is found to be retrocecal in about 30 per cent of cases. The sequelae of inflammation in an appendix so situated are quite different from those of the peritoneally placed appendix and there-

fore the symptoms and the surgical measures required differ greatly.

The simplest form of retrocecal appendix has the usual mesentery. The second variety passes upward outside the colon, beneath the peritoneum of the lateral iliac or lumbar fossa. It is without mesentery and is retroperitoneal except anteriorly and at its tip. The third type passes upward along the cecum and colon and is peritoneal covering is that of the colon wall. The side next the gut has no peritoneum. The fourth type, which is rare, passes up beneath the cecum and ascending colon between the layers of the mesocolon, and is a true retroperitoneal appendix.

Two stages of appendicitis are recognized: (1) that in which the infection is confined to the appendix, and (2) that in which the infection has broken through the gut wall and extends either to the peritoneum, the cellular tissues, or the blood stream.

In the retrocecal appendix the peritonitis extends primarily to the lateral or lumbar peritoneal fossa and is usually confined to this space outside the colon, but may extend upward toward the kidney or liver and gall bladder or even into the lung. The author had two cases in which the pus ruptured into bronchi.

The cases with direct extension may have an abscess pointing over the iliac crest, the lumbar region, or extending through the cellular tissue down over the buttocks to the knee.

In the fourth type the extension is closely associated with the origin of the mesocolonic veins, and septic thrombo-phlebitis occurs, which may reach the liver where it may cause single or multiple abscesses.

These severe complications are seen during the author's earlier practice and represent failure of early diagnosis and inadequate treatment. During the last ten years Jackson has had no such serious complications.

In the first stage the symptoms are the same whatever the location of the appendix. In the second they vary with the location. They may be divided into: (1) constitutional, such as fever, rapid pulse, general depression, and blood changes, and (2) local, which should be more closely observed in order to locate the appendix. In the early stage the local symptoms do not vary with the site of the appendix and are sudden in onset. Severe pain is usually referred to the epigastrium and there is more or less vomiting. As the condition spreads to the peritoneum, the symptoms of peritonitis supervene, and later become localized over the region.

In cases of retrocecal appendix the peritonitis is more localized and may quickly disappear but if deep pressure is made over the iliac crest or in the lumbar fossa, very distinct tenderness, previously unsuspected by the patient, is discovered. This is a valuable sign. Proper diagnosis requires: (1) an accurate detailed account of the symptoms of the first twenty-four to forty-eight hours, (2) recognition of the fact that the later signs are chiefly those of

peritonitis, which in cases of retrocecal appendix, is limited largely to the outer side and the back of the cecum. (3) the evidence of continued infection, (4) slight stiffness and distinct tenderness on pressure above the crest of the ilium in the lumbar region.

The treatment of retrocecal appendicitis is the same as that of any other type. Early diagnosis and early operation are important. In cases of gangrene or perforation, operation is usually done as soon as possible, but as there is not the same acute danger as when general peritonitis threatens, the patient's general resistance and condition are sometimes improved before operation by the administration of glucose and soda, proctoclysis, hypodermoclysis, gastric lavage, and enemata for twenty-four hours.

The McBurney incision is used as it can be extended toward the kidney or liver. The general peritoneal cavity is washed off with hot packs, adhesions are broken up with the index finger close to the lateral wall and the appendicular structure is removed. When the appendix extends along the colon, great care is necessary to avoid injuring the latter. After removal of the appendix its stump is buried. The colon can be considerably infolded. Proper drainage is often the key to success. A counter drain through a stab incision in the lumbar region will often be indicated. A large tube is used, and the patient placed in the Fowler position. A cigarette drain is placed in the abdominal incision and, if indicated into the pelvis, and the wound is closed in layers. Hot fomentations are immediately applied to the wound to help control infection in the superficial layers, thus shortening the convalescence and lessening the liability to weakness of the walls and herniation.

MARCUS H. HOWART, M.D.

Rouffart: Chronic Appendicitis and Appendectomy
(Appendix chronique et appendicectomie) *Gynec. et obst.* 9, 3, 5

The literature indicates that many surgeons experience great difficulty in making diagnosis of chronic appendicitis. Rouffart states that he cannot understand Gibson's failure in 40 per cent of his cases to relieve the symptoms attributed to chronic appendicitis by appendectomy. Neither can he understand why others claim great difficulty in differentiating chronic and subacute appendicitis from painful mechanical and inflammatory affections of the cecum, ascending colon or omentum. Typhlitis, ptosis, and chronic intestinal stasis are rarely encountered, easy to diagnose, and not comparable in gravity to appendicitis. In the main, their treatment is not surgical, anastomosis, bowel fixation, and resection are rarely indicated. Rouffart agrees with Wether that the principal offender in all these conditions is the appendix, and that therefore in chronic appendicitis with colitis, prolapse or dilatation of the cecum, etc., the first step should be an appendectomy.

In the hundreds of cases of chronic appendicitis on which the author has operated in the last thirty years, he has had no failure. Abdominal pain, in-

fection, outbreaks, and intoxication entirely disappeared after the appendectomy. Also after refusal of operation in this condition he has seen many poor results, even death. In three of his cases in which there was a return of symptoms necessitating a second operation he found new pathology such as retroversion of the uterus or adhesions in the pelvis, but nothing referable to the appendix. He therefore assumes that the therapeutic failures reported by others may be diagnostic failures. He believes it is easy to differentiate between appendiceal and colonic inflammation.

In conclusion the cases of two female patients with chronic appendicitis who were operated upon are reported. Rouffart makes a short incision $\frac{3}{4}$ to 3 cm. running obliquely downward and inward from a point 2 or 3 cm. distant from the antero superior iliac spine and at a level with the spines. This can be converted into the Pfannenstiel incision if an unforeseen condition is exposed when the peritoneum is opened.

KILLGUS SPED, M.D.

D Agata, G: Amputation of the Rectum and Total Prostate-Vesiculectomy for Associated Neoplastic and Tuberculous Processes (Amput. totale del retto, prostatectomia vesiculectomia per concomitante processo neoplastico tubercolare) *Arch. ital. di chir.* 9, 3, vi, 60

D Agata reports the history of a man aged 57 years, in whom the anatomical and histopathological findings revealed the presence of an adenocarcinoma of the rectum propagated to the prostate which was already chronically inflamed. Biological tests and the clinical manifestations of the inflammatory process left no doubt as to its tuberculous nature.

The coexistence of a tuberculous and neoplastic process in the same tissue as in this case is very rare. In the cases which have been reported in the literature previously the tuberculosis preceded the cancer or vice versa.

In the author's case the clinical diagnosis was confirmed at operation. On account of the extension of the neoplastic process, D Agata did classical Lawrance total amputation of the rectum and a prostate-vesiculectomy. The segment of intestine amputated showed a large ulcerated neoplasm occupying the entire rectal ampulla, and a sagittal section of the prostate-rectal mass showed the prostate infiltrated with the same neoplastic tissue and tuberculous lesions. The neoplasm was proved to be an adenocarcinoma by microscopic examination.

The patient left the hospital four months after the operation in excellent condition. He was then able to retain even fluid faces, and there was no sign of recurrence.

W. A. BRYNJA

Bowling, H. H., and Anderson, F. W.: The Treatment by Radiation of Cancer of the Rectum *Am. J. Roentgenol.* 9, 3, 2, 30

The authors give an account of the technique used and the experience gained in approximately 300 cases of cancer of the rectum treated at the

Mayo Clinic. The majority of these cases are inoperable, and only a reasonable amount of placebo treatment was given. Some of them were recurrent following radical surgical procedures. In about twenty cases a radical posterior resection was done after radiotherapy without any added surgical difficulties.

The authors give a classification of the types of rectal cancer and describe the various forms of applicators, with illustrations. They discuss the technique employed, the factors to be considered in the treatment of the different types, and the difficulties and reactions which are apt to be encountered.

They conclude that in the majority of rectal neoplasms, radium has a definite inhibitory and destructive effect and is a valuable aid to surgical measures.

For the best results, an abdominal exploration should be made except in grossly inoperable cases. It is not essential to perform a colostomy in order to give radium and roentgen ray treatment. If the case is grossly inoperable radium and the roentgen rays may be used, colostomy being done only if obstruction is impending.

When colostomy has been made the growth should be treated through the distal loop and when the growth can be felt digitally through the anal walls, the vagina should be packed with radium.

Early diagnosis is of paramount importance. A rectal examination should be made more frequently by the general practitioner. Some neoplasms of the rectum respond readily to radium and roentgen ray treatment, while others are resistant. Long survival is possible even in untreated cancer of the rectum.

The best method of radiation therapy is a combination of radium and roentgen ray used as early as possible.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Gundermann: The Pathology of Human Bile Secretion and Report on Polycholia (Zur Pathologie der menschlichen Gallensekretion, mitrich in: Beitrage zur Polycholie) *Arch. Klin. Chir.* 93, 1929.

The author mentions the fact that the quantity of bile obtained through a biliary fistula in the human being must be regarded as pathologic and does not permit any estimation of the physiological quantity. The quantity of bile, urinary output, and fluid intake were determined in a number of cases in which cholecystotomy had been performed. Only those cases were studied in which the stools were acholic, practically all of the bile being led off through a soft catheter.

The period of observation was the first eight days after the operation. Particular attention was paid to the influence of the intake of fluid upon the quantity of bile. Rest in bed, because of the lack of body movement produced an effect upon the

blood pressure and circulation in the liver and further reduced the renal output of fluid to the kidneys. Finally in a series of cases the chloride content of the bile was estimated in terms of sodium chloride in order to determine the part played by the liver in sodium-chloride metabolism. Of thirty-one cases, thirteen were found suitable. Nine of the latter showed an average secretion of 350 cm. of bile in the first eight days. The quantity of urine varied from 500 to 550 ccm. The total of both secretions fell noticeably below the fluid intake. In some cases the differences were so great that water must have been retained in the body. Two patients daily secreted 500 cm. of bile and between 750 and 1,000 ccm. of urine the fluid intake and total secretion counterbalancing each other. In one case the quantity of bile and urine was 500 ccm. while the intake of fluid was usually somewhat less.

The investigation therefore demonstrated that the secretion of bile is independent of the fluid intake but that the latter has an effect upon the urinary output. The low through bile indicates an unbalanced state of the body which must be corrected through the subcutaneous injection of fluid, preferably the infusion of glucose. During this time, the quantity of bile obtained through the fistula averaged about 50 ccm. in most cases, and generally did not reach the quantity of urine passed in the same period of time. The determination of the chlorides of the bile showed that bile from the gall bladder has a higher content of sodium chloride than that from the liver and further that the sodium-chloride content of bile is very constant and independent of the amount of the salt taken in the food.

An anecdotal case in these investigations produced more bile alone than the amount of fluid taken in. In this case 8,500 cm. of fluid were introduced into the body and 9,000 cm. were lost through bile and urine. Of the fluid lost, 3,800 ccm. were urine and 800 cm. were bile. Therefore the bile secreted was only 200 cm. less than the entire fluid intake. The loss of weight during this time was 2,600 gm. The bile was strikingly light in color and thin. As the secretion of bile is probably as great before the operation as after it and the quantity of urine excreted before the operation was large, it seems justifiable to assume that in some persons there is a double circulation of water, some of the water ingested reaching the intestine through the liver and bile before it is excreted by the kidneys.

The author's opinion on the water content of the food is not essential for a concentrated flow of bile. Numerous other factors such as obstruction, are also of little importance. The effect of hormones as well as the causative relationship between cholangitis and increased bile secretion is questioned. In any event it is a fact that here we have true polycholia produced by an unusually profuse excretion of water.

The author concludes that distinction should be made between the terms polycholia and

pleochromin. The latter indicates a condition of the liver cells in which a highly-pigmented, thick, ater poor bile is excreted, whereas polycholus means the secretion of a thin watery bile.

HAUSMANN (Z)

McMaster P D Brown, G O and Rous, P
Studies on the Total Bile III On the Bile Changes Caused by Pressure Obstruction and on Hydrohepatosis *J Exper Med* 93 xxxviii, 685

By experiments on dogs the authors found that in bile which is secreted against an abnormally high pressure, as during partial obstruction, the pigment of the bile is increased. The output of bile is notably lessened. The fluid obtained at the greatest pressure compatible with secretion contains only traces of the typical biliary constituents. The relationship of these alterations in the bile to the consequences of partial biliary obstruction is discussed.

An analysis of the liver changes following biliary obstruction brings out their essential likeness to the changes that occur under similar circumstances in glands in general and the kidney in particular. The major physiological factors concerned in the development of hydropneumosis and in the liver changes after biliary obstruction are identical. It is suggested that the term hydrohepatosis be used not merely to designate the liver condition, but to indicate the principles underlying its development. In clinical cases of biliary obstruction the likeness to hydropneumosis is often hidden because of the activity of the gall bladder which renders the stasis bile dark and thick. There is the concealed hydrohepatosis differing merely in the character of the duct content from the manifest hydrohepatosis with white bile which is found when the gall bladder fails to act.

GEORGE E. BELLER, M.D.

Brown, G O McMaster P D, and Rous, P
Studies on the Total Bile IV The Enterohepatic Circulation of Bile Pigment *J Exper Med* 93 xxxviii 699

The authors' experiments were carried out on dogs permanently intubated for the collection of the total bile. When the dogs were fed cooked liver of the sheep or ox, the bile for several days thereafter was green instead of the previous yellow brown.

The change in color of dog bile after the feeding of the green bile or the liver tissue of herbivora is no more than suggestive in this connection. The appearance in the bile of cholesterin after the administration of the pigment by mouth demonstrated conclusively that substance nearly related to bilirubin is absorbed in the intestine and excreted by the liver.

The results of the feeding of dog bile leave no doubt that the bilirubin output was increased thereby in many instances. One reason why it was not always increased was that circumstances were fre-

quently unfavorable to absorption from the intestinal tract. The pigment increase is certainly not due to flushing out by the quickened bile stream. A relatively small liberation of hemoglobin by blood destruction would account for it. It was in this way that one investigator explained an increase he observed after the feeding of large quantities of bilis to fistula dogs.

In one of the authors' dogs an average of approximately 0.7 gm of extra pigment appeared in the bile on each of eleven successive days. This might have been caused by an extra destruction daily of 6.5 cm of blood with 80 per cent hemoglobin. In the four hour specimens from dogs given large amounts of the cholate of dog bile, another investigator found no increase in pigment. It is possible that the pigment increases observed by the authors were not due to a greater total output of the substance but were the result of recurring temporary alterations in the rate of elimination such as follow the administration of carbohydrates.

The proportion of bilirubin presumably resorbed in their experiments was sometimes negligible and sometimes high. In one dog it amounted to 7 mgm of the 7 mgm administered daily (4 per cent). That bil feeding is of benefit to man and other animals losing the secretion by fistula has long been acknowledged. Intensely jaundiced patients may live for years, but if, following an operation, all the bile escapes by the fistula, the loss of weight is very rapid and death may soon result if the patient is old.

The authors summarize their findings as follows: In dogs fed the green bile or the liver tissue of herbivora, the bile secreted later frequently becomes green, changing from the previous yellow brown. When sheep bile containing cholesterin is fed, the bil comes to contain this pigment. When dog bile in quantity is given, a well marked increase in the output of bilirubin by the liver frequently follows. Taken together these facts indicate the presence of an enterohepatic circulation of bile pigment.

GEORGE E. BELLER, M.D.

Mitchell, H C Acute Catarrhal Jaundice. *Med Surg* 93 lxxviii 390

The author classifies jaundice as (1) congenital jaundice, hemolytic, icterus neonatorum, and (2) acquired jaundice. The latter includes infections of known and unknown origin, obstructive and chemical jaundice. This report is based upon a study of 9 cases which were admitted to the hospital from the American troops on the Rhine during the period from August 9 to July 9. During this time all jaundice cases were sent to a special ward for intensive study.

The routine procedure consisted of thorough physical examination and investigation as to typhoid infection, the stage of the disease if it was present, and the treatment that had been received. Record was made as to the degree of staining of the conjunctiva, coating of the tongue, and amount of bile in the stool. The mental condition was noted, and

record was made as to subjective symptoms such as heart burn, ball in the stomach, "distress" after eating, etc. Further examination included gall-bladder drainage, a functional test of the liver (hemoclastic crisis) and an X-ray examination of the gastro-intestinal tract whenever indicated.

The author describes in detail the technique of examinations and the apparatus used. The cases studied included three of acute yellow atrophy of the liver. These resembled the cases of acute catarrhal jaundice clinically, the only difference being one of intensity. The number of cases of jaundice with syphilis was about half that of cases without syphilis. Patients with syphilis were more anemic than those without, presented more symptoms referable to the liver and were jaundiced longer.

The importance of alcoholism, especially the drinking of sour wines, in the etiology of these cases could not be definitely determined as the histories were unreliable in this respect, but food, especially the eating of a certain kind of sausage, played an unmistakable part as among the officers who did not eat this kind of food, there were no cases of jaundice whereas every soldier with jaundice stated that he had eaten it regularly.

There was no seasonal variation in the number of admissions. Culture of the bile and all other bacteria examinations were negative. White pus was found in the upper respiratory tract in a certain percentage of the cases, all uncomplicated cases were afebrile.

Fractional examination of the contents of the duodenum gave evidence of the presence of gastric or duodenal ulcer or chronic gastritis. The most striking acid curve was that of cases of duodenal ulcer. This brought out the fact that when the total free acid was over and the second or third duodenal specimen showed a total acidity exceeding 50 per cent of the total gastric acidity, duodenal ulcer was present. This finding was made in 80 per cent of the cases of ulcer of the duodenum and was not made in any case without evidence of ulcer.

The treatment consisted of the usual calomel purge followed by the daily administration of $\frac{1}{4}$ oz. of sodium phosphate. In some cases mixture of hydrochloric acid, pepsin, and strychnine was given. Others received quinine. Patients with ulcer or gastro-intestinal irritation were given modified Sippy treatment.

In summarizing the author states that acute catarrhal jaundice is not a disease but a symptom and the only clinical difference between it and acute yellow atrophy of the liver is a difference of degree. There is no apparent obstruction of the common duct. Bacteriological examination of the bile is negative. Ninety per cent of cases exhibit duodenal ulcer. It is evident that certain diets play an important role in the production of jaundice, and it is probable that the disease originates in the stomach and duodenum, affecting the liver secondarily. The toxins may then be secreted from the liver through the bile and become resorbed by the intestine, a vicious circle being thus established. WILLIAM J. PICKETT, M.D.

Nitter A. The Results of Ligating the Hepatic Artery. Observations on the Functional Examination of the Liver (Ueber die Folgen der Ligatur der Arteria hepatica. Beitrag zur Funktionsprüfung der Leber). *Wsch. d. Grenzgeb. d. Med. Chir.* 9, 1917, 76.

Following description of the anatomy of the blood supply of the liver and stomach, which is illustrated by sketches, the author mentions the clinical cases of ligation of the hepatic artery or its branches which have been reported in the literature (twenty-nine cases, three of them personally observed) and discusses the prognosis and clinical aspects following this procedure.

As regards the site of the ligation, the common hepatic artery is the least dangerous since the collateral circulation—the right gastric and gastro-epiploic and the superior pancreaticoduodenal arteries—ensures sufficient blood supply. Following ligation of the arteria hepatica propria or of the commons and its collaterals the prognosis is very unfavorable. In ten cases there were seven deaths. One of the author's patients survived only because an accessory vessel was present between the stump of the arteria hepatica communis and the arteria hepatica propria, distal to the ligation. In the two other cases, which were operated upon by the Kehr method, partial necrosis of the liver supervened.

The prognosis of ligation of the right branch of the hepatic artery is somewhat more favorable (mortality about 50 per cent). The mortality of ligation of the left branch is 70 per cent.

It is of interest that in the author's two cases in which the operation was performed before the function of the liver was impaired in spite of the fact that icterus was not observed. Even after the third week distinct disturbance of carbohydrate and protein metabolism was noted, finding supported by the galactose test of Bower and by Abderhalden's method of amino-acid determination. This also explained certain disturbances in the postoperative period.

The author assumes that there is serious damage to the liver if following ligation of a branch of the hepatic artery the amino-acid excretion is four or five times the normal figure. He believes that when the patient condition will permit it, a second laparotomy for the excision of the damaged lobe should be done several days after the functional tests of the liver. COLLARDY (2).

Marrs, F. C. and Magath, T. B. Studies on the Physiology of the Liver. II. The Effect of Total Removal of the Liver After Pancreaticectomy on the Blood-Sugar Level. *Arch. Int. Med.* 9, 3, 1917, 707.

Previously reported studies by the authors on the physiology of the liver demonstrated that

A characteristic group of symptoms followed by death develops after total removal of the liver.

These symptoms are associated with decreasing blood sugar and the various symptoms and death occur at definite blood-sugar levels.

3 The injection of glucose after the development of symptoms bolshes them and restores the animal to normal

4 If glucose is administered after hepatectomy in amounts sufficient to maintain the blood sugar level at or above normal, the characteristic symptoms do not develop and the animal lives for a variable period of time which is always much longer than if glucose had not been administered, but dies following the development of a totally different group of symptoms

These striking and very definite results proved that the maintenance of the normal level of blood sugar is dependent on the liver. They showed also that there is a certain critical level of blood sugar below which it is impossible for the organism to live. The liver thus assumes renewed importance and undoubtedly has a vital function as regards carbohydrate metabolism.

It has been known for a long time that pancreatectomy causes glycosuria and hyperglycemia. It is evident, therefore, that the two glands, liver and pancreas, have a reciprocal effect on the concentration of sugar in the blood. When the liver is removed, the sugar disappears from the blood; when the pancreas is removed, the sugar increases in the blood. It was the purpose of the authors' research to determine whether or not the hyperglycemia following pancreatectomy depends upon the presence of the liver.

The study was made upon dogs in which the liver was removed by a technique described in a previous article. The pancreas was removed at various periods of time before removal of the liver. It was found that when the two glands were removed at the same time, the resulting condition was the same as that following removal of the liver alone. When the liver was removed from twenty-four to ninety-six hours after pancreatectomy, the blood sugar decreased quickly and the same characteristic symptoms developed as after hepatectomy but at a higher blood sugar level. The injection of glucose restored the animal to normal but the effect was transitory. The total removal of the pancreas and partial removal of the liver in an animal in which an Eck fistula had been made was followed by only slight or no increase in the blood sugar.

These experiments prove that the presence of the liver is absolutely necessary for the hyperglycemia following pancreatectomy.

Farrel, G. M. and Bockius, H. L. Observations on the Value of Phenol-tetrachlorophthalein in Estimating Liver Function. *Arch Int Med* 1925, xxv, 623.

The authors summarize the work which has been done up to the present time upon the value of phenol-tetrachlorophthalein in estimating liver function and draw the following conclusions:

Phenol-tetrachlorophthalein is an ideal substance for estimating liver function, as in health it is eliminated solely by the bile.

In health the forty-eight hour output of the dye in the feces is fairly constant.

3 The time of appearance of the dye in the bile is of decided importance, but it cannot be determined by the feces method.

4 The dye output decreases as the hepatic parenchymal damage becomes more extensive.

The recent work of M. Nal, Aaron and others with the duodenal tube opened up a new field for investigation. The authors were stimulated to go on with the work and to attempt the development of a technique which would make this test comparable to the phenolphthalein-kidney test. Fifty cases were studied.

The duodenal tube was introduced into a fasting stomach and gavage performed, a small quantity of water being left in the stomach. The tube was then passed on into the duodenum and water was given by mouth to insure a steady drip of bile stained fluid from the tube. The dye was then injected intravenously and the bile collected in solution of sodium hydroxide. The time of appearance of the first faint color and of the maximum color was recorded. Each half hour's output was collected for two hours and the amount of dye recovered was estimated by means of a colorimeter.

The conclusions drawn are as follows:

A delay in the appearance time of the dye was proportionate to a decrease in the output. The quantitative estimation of the dye output in two hours is of more importance than the recording of the first appearance time but both should be considered.

When the liver was grossly pathologic the time of appearance of the maximum color was twice as long as in normal cases and the dye output averaged one eighth of the output in normal cases.

3 The output of dye in normal cases varies with age. The younger the subject the greater the amount of dye recovered.

4 This test should be of distinct value in cases in which the functional capacity of the liver is only slightly disturbed and when it is clinically negative to other methods of examination.

5 The technique is extremely simple and can be performed with ease by the average clinician. Common duct obstruction of course interferes with the test.

C. J. GRAMER, M. D.

Kaiser, F. J. The Movable Liver and Its Successful Treatment. A New Method of periton Based on the Principle of Supporting the Liver from Below and Plastic Procedure on the Abdominal Wall with Doubling of the Aponeurosis (Die Wandstiche und ihre erfolgreiche Behandlung. Eine neuartige Operationsmethode mit dem Prinzip der Stützung der Leber von unten, erfordern mit Bauchwandplastik mittels Aponeurosendoppelung). *Deutsche Zeitschr f Chir* 9. März 4.

Hepatic ptosis is of the following two types:

The purely local condition due to lowered intra-abdominal pressure from enlargement of the lower abdominal cavity following pregnancy; the removal

of tumors, acidic fluid etc. These are the cases in which surgery is indicated.

2. The general splanchnoptosis associated with the congenitally asthenic habitus (persons with flat thorax, light bone structure, heart leakage, a narrow aorta, and an unstable nervous system). These are the cases in which it is important to avoid operation. The treatment should be conservative.

After discussing the diagnosis and the conservative and operative methods of treatment hitherto in use, Kasper describes a new surgical procedure which is based on the principle of supporting the liver from below. The technique is as follows.

An incision is made in the median line of the abdomen, the ligamentum teres is divided, and the liver is forcibly put back into position. The right side of the abdominal wall is then forcibly raised and a horizontal incision is made from within out-

ward, beginning three or four fingerbreadths from the spinal column and continuing up to two finger breadths from the median line. This incision begins posteriorly at about the level of the tenth rib and extends anteriorly to the ninth rib. It is carried through the peritoneum and fascia transversalis as far as the musculature, and then far enough downward so that a peritoneal pocket may be formed by forcing aside the divided layers of the musculature of the diaphragm and abdominal wall with blunt instruments. Slight hemorrhages are arrested by the subsequent plugging action of the liver and are favorable to close adhesion. During the separation of the peritoneum, care must be exercised to prevent pneumothorax.

The lower segment of the right lobe of the liver is placed in the pocket formed in the peritoneum. As rule it will remain in this pocket without further fixation, but if it is thought best, a few sutures may be used to fix the edge of the pocket to the often thickened capsule of the under surface of the liver.

To prevent recurrence after the attachment of the liver a plastic operation on the abdominal wall is usually necessary. The author makes an incision from the ensiform process over the navel to the symphysis, dissects back the skin and subcutaneous fat for the width of the hand on both sides, and divides the layers of the abdominal wall in the median line. With strong interrupted silk sutures he then fastens the right layer of the abdominal wall to the inner surface of the peritoneum of the left side as far as possible taking in the spongy layers, and brings the left spongy layer over as far as possible to the right and attaches it with interrupted sutures to the outer surface of the spongy layers. Superfluous skin is then resected. HILZ (2)

Manson-Bahr F., Low, G. C., Pratt, J. J. and Orrell, A. L. The Treatment of Liver Abscess by Aspiration. *Lancet*, 1913, vol. 941.

The authors describe a simple procedure which they believe should replace the classical open op-

eration for liver abscess. Aside from its attending risks, the open operation is associated with risks of secondary nature. Secondary infection of the sterile abscess cavity often follows with resulting sinus formation. The mortality of liver abscess remains high. Various factors influence the death rate. European patients have a better chance for recovery if they are operated upon in England than in the tropics. The mortality is lower in Europeans than in natives of the tropics because Europeans apply for treatment as soon as the disease is manifested.

Rogers in his *Bowel Diseases in the Tropics* (1911) states that the mortality of liver abscess, even with anti-septic treatment, is still 50 per cent, while in the cases in which the closed method of treatment is used the mortality is only 14.4 per cent. Aspiration of liver abscess dates back to 1853, when Annesley advocated drainage through a trocar. In 1871 Maclean evacuated the pus through

Bowditch syringe and gave 30 to 55 gr. of ipecac daily. Jassett in 1885 reported one case which was aspirated sixteen times for the removal of 400 oz. of pus. Rogers advocated repeated aspiration and the introduction into the cavity of quinine solution.

In this paper the authors outline a series of fifteen cases which have been under their care during the past three years. Aspiration was done in all, and in some of them anti-septic treatment was given. All recovered. The technique was as follows:

1. A Potain aspirator was used, the needle being inserted not more than 3½ in.

2. An extra supply of tubing as kept in reserve in case the tubing used became plugged during the drainage.

3. When pus was found at exploratory puncture it was thoroughly and quickly drained.

4. When the pus was too thick for aspiration, Manson trocar and cannula were used.

5. The site chosen for drainage was the point of greatest swelling and tenderness. If none was present, either the eighth anterior or mid axillary interspace or the epigastric point was chosen.

6. Not more than three punctures were made at one time without anesthesia, if an anesthetic was used, six punctures were made.

7. As much pus as possible was evacuated at one time.

Repeated punctures caused little hemorrhage. In most cases general anesthesia is preferable to local anesthesia. For the induction of local anesthesia 1 per cent novocaine with adrenalin is best.

Of the series of cases reported only one had a recurrence of the abscess this developed nineteen months after drainage of the primary abscess.

One case in this series, although treated in the same way as the others, showed marked variation from the usual course after the aspiration. The patient was subjected to three operations and was obliged to remain in the hospital for six months. In this case secondary infection was probable.

The average length of time in the hospital was 29.8 days. Anti-septica treatment was employed with the aspiration. Its value is unquestioned although the use of any substance locally in the abscess cavity was proved unnecessary.

In their conclusions the authors make the following statements with regard to the diagnosis:

1. Liver abscess may be present when least suspected and when all laboratory tests and examinations are negative.
2. Leucocytosis is not always present and when it is present, is usually low.
3. Pain in the right shoulder is often the most prominent symptom.
4. Liver abscess may be present without any tenderness over the liver.
5. The empyema may or may not be demonstrable in the aspirated pus, but negative findings do not necessarily prove its absence.
6. The X-ray may be of considerable value in the diagnosis.

The conclusions drawn with regard to the treatment are as follows:

1. Either general or a local anesthetic can be used depending upon the patient's condition and the surgeon's preference.
2. The entire abscess should be drained at one time if possible.
3. The operation is followed by great relief and but little or no shock.
4. It is rarely necessary to drain the abscess a second time but if necessary drainage may be repeated.
5. Large doses of emetine in the form of emetine benzoate given by mouth are essential as this drug helps to clear the source of infection from the bowel and to prevent re-invasion of the liver by the entamoeba.

H. M. CASE, M.D.

Lindley, A. I. Liver Abscesses: Report of 100 Operations. *Ann. Surg. Gynec. & Obst.* 9:3 1919, 116.

The author reports a series of 100 cases operated upon for liver abscess, the majority of which he believes were amoebic abscesses. The great number were well localized, large single abscesses with dense fibrous walls.

The technique of operation usually employed included an incision parallel to the ninth rib extending outward from point in from the right costal margin. A portion of the rib resected and the diaphragm incised. The liver exposed and blunt scissors inverted into the abscess cavity through a small incision in the liver capsule. Septa present were broken down by blunt dissection and the abscess was evacuated as completely as possible and packed with gauze. Attempt was made to suture the liver to the chest wall. The pleura as encountered in a few cases and in one case was sewed without harmful result.

For solution used 1 per cent. salt solution, 1:1 for irrigation. After the removal of the gauze packing did not hasten healing. Emetine as used

in conjunction with the surgical drainage. The author mentions the importance of not allowing the drainage opening to close too soon and states that because of the danger of secondary osteomyelitis of the ribs, which developed in three cases, the ends of the divided rib should be covered with peritoneum. The mortality in the series reported was 10 per cent.

Ludlow states his belief that the danger of a fistula has been overestimated, and that in a series of cases now under observation the aspiration method combined with the use of emetine is being carried out with promise of good results.

SCHAEFER, L. KOENIG, M.D.

Monse, E. The Surgery of Gumma of the Liver. *Zur Chirurgie des Lebergummas. Beitr. II.* *Chir.* 9:3 1919, 43.

The author reports a case in which a gumma in the right lobe of the liver of a woman 37 years of age was excised through healthy tissue. He then discusses the frequency of syphilitic diseases of the liver and their clinical aspects and treatment especially the indication for surgical interference. He advocates a Wassermann test in all cases of doubtful tumors in the upper part of the abdomen. If the diagnosis then remains doubtful exploratory laparotomy biopsy and microscopic examination are indicated. Threatening or already present danger to neighboring organ due to contracting process in the region of a gumma or a histologically doubtful tumor indicates removal. Under favorable circumstances, a well circumscribed, pediculated, gummatous tumor may be removed radically. When this is impossible specific treatment should be given.

LEONARD, (Z.)

Denéchau, D., Fruchstuetz, H., and Agoulon, P. Four Cases of Tertiary Syphilis of the Liver of Pseudo-Surgical Type. The Importance of Pain in Tertiary Hepatitis (Quatre cas de syphilis tertiaire du foie à forme pseudo-chirurgicale. De l'importance de la douleur du foie tertiaire). *Bull. et Mém. Soc. méd. d'Alg.* 1919, 9:3 1919, 556.

The authors report four cases of tertiary syphilis of the liver in which the diagnosis was difficult and surgical intervention was considered or done. Laparotomy was performed in two cases. One of the two other patients refused to submit to operation and the other as a poor surgical risk.

Only two of the patients gave a history of syphilis and only two had positive Wassermann reaction. The hepatic lesion in the two cases with a history of syphilis occurred from three to seven years after the initial lesion. In two of the cases there was an irregular fever for several weeks but this subsided after the institution of anti-luetic treatment. In three of the cases the liver was greatly enlarged. In one case there was a tumor in the left hypochondrium which suggested a hydatid cyst of the spleen. In three cases the pain was intense.

In all cases, arsenical treatment, begun as soon as the diagnosis of syphilis was made, gave excellent results.
ROXCE JAMES, M.D.

Hartmann: Wounds of the Choledochus (Blessures accidentelles du cholédoque) *Bull. et mem. Soc. de chir. de Par.* 9 3 1896

Hartmann reports the case of a patient who was still in excellent health 14 years after a end-to-end suture of the choledochus done by Gossel, and cites also a case in his own practice, that of a patient who was in excellent health for ten years after reconstruction of the common duct.

Injuries to the choledochus occur most frequently during a cholecystectomy which is begun at the ducts but a few have occurred when the fundus of the gall bladder was detached first. The author emphasizes the importance of isolating and identifying the different elements of the biliary tract before ligating and cutting them.

ROXCE JAMES, M.D.

Stocker La Rosa, K. The Artificial Common Duct (Artificialer Gallengang) *Chir. Jahrb.* 9 3 4 7

In Spain the number of cases of biliary disease coming to the surgeon is constantly increasing because of greater accuracy in the diagnosis and increasing confidence in the results of operation.

Stocker reports cases of obstruction of the common duct, in which 1. the ampulla, which is dilated and ruptured, subsequently become retracted and necessitated a second operation. 2. the secondary operations Stocker formed an artificial common duct by means of a rubber tube. This tube acted as dilator softened the tissue in its vicinity and served as a framework for the restoration of the incised common duct, preventing contraction of its lumen. As stenosis of the outlet of the duct is apt to be caused by calculi or by adhesions due to infection, the rubber tube should be introduced as far as the lumen of the duodenum and should be left until it is expelled spontaneously. It is bad practice to withdraw the tube through an opening in the duodenum when its purpose is fulfilled as this is apt to cause the formation of a duodenal fistula.

W. A. BAKER.

Appert, F. L. and Cameron, G. A New Test for Pancreatic Efficiency: An Aid to the Diagnosis of Gall-Bladder Diseases and Certain Obstructive Dyspepsias. *Med. J. Australia* 9 2 1 3

The new test reported was devised to estimate the alkali producing power of the pancreas, one of the most important functions of this organ. The alkali is measured indirectly by titrating the fact that gastric acidity is normally limited by reflux of pancreatic alkali from the duodenum and acid introduced artificially into the stomach is neutralized by this reflux. The actual test is carried out as follows:

A Rehfuss tube is passed and the fasting contents of stomach are removed. Two hundred and

fifty cubic centimeters of warm 4 per cent hydrochloric acid are then introduced into the stomach and 5-cm samples are aspirated every fifteen minutes until the stomach is empty. The samples are titrated for free acid and a curve is plotted from the results. Two and six-tenths grams of sodium bicarbonate dissolved in water are given to prevent the development of headache at the completion of the test. 1. cases of pancreatic defect the rate of neutralization is greatly reduced.

This test has been carried out in six cases. In none except one of pyloric obstruction did it fail to indicate pancreatic deficiency. The authors do not claim that it gives any more complete information regarding pancreatic function than other tests, but adocal is used in conjunction with other tests for the diagnosis of obscure dyspepsias.

JOHN W. VINTAGE, M.D.

Feutz, J. L. A. The Differential Diagnosis of Pancreatic Lithiasis (Zur Differentialdiagnose der Pankreolithiasis) *Deutsche med. Wochenschr.* 9 3 17 8

For the diagnosis of pancreatic disease no one method is specific, and even with the combined use of all the usual methods many problems still remain. Feutz does not agree with Wallis that the presence of diastase in the blood and urine with positive Lorenz test and the excretion of sugar in the urine or at least an alimentary glycosuria constitute the chief bases of a reliable diagnosis. In his opinion, physical examination of the topographical relations, repeated microscopic examination of the feces and the use of the duodenal tube to test the excretory function of the pancreas, particularly with regard to the ferment content of the duodenal juice remain the best standby in the diagnosis. The diagnosis of pancreatic calculi is difficult because these like gall stones, may not cause clinical symptoms.

With regard to the differential diagnosis Feutz agrees with Albee and cites as significant symptoms: intermittent pain in the gastric region, the profuse vomiting of bile, resistance in the left epigastrium and mesogastric regions, possibly concomitant alimentary glycosuria or diabetes, and the signs of faulty digestion and resorption of fat and protein. The diagnosis of pancreatic calculi can be established only by exclusion and then only with considerable reserve. Every condition arising in the biliary passages must be excluded. Feutz refers here to the estimation of the bilirubin content of the blood serum according to Hilmann van den Bergh and examination of the duodenal juice for abnormal biliary products and ferment content.

According to the suggestion of Thiborn, on Kern and Wiener Feutz used pilocarpine to stimulate the secretion of the pancreas in a young girl believed to have pancreatic calculi, believing that by this procedure the stone could be forced out or because of obstruction to the secretion, the diastase content of the blood would show an increase.

The latter was the case. As the roentgen-ray plates showed small shadows in the region of the pancreas, the diagnosis was apparently strengthened. Operation disclosed small calcified mesenteric lymph nodes.

In second case that of a woman 77 years old the heavily calcified wall of an aneurism of the splenic artery which was abnormally tortuous and bidden by the pancreas lead to the erroneous diagnosis of stone. PLATE 2

Simmonds, M. Pancreatic Lithiasis (Ueber Lithiasis pancreatica). *Fortschr. d. Geb. d. Roentgenstrahlen* 9: 3, xxx, 8.

In the roentgenograms of number of autopsy specimens of the pancreas Simmonds found very distinct shadows of pancreatic calculi. From this he drew the conclusion that pancreatic calculi might possibly be roentgenologically diagnosed during life.

In 36000 utopases Simmonds found pancreatic stone formations in nineteen. Fifteen carefully studied cases were those of men between 34 and 57 years of age six had been alcohol addicts and nine had been diabetic. Colics had been present in only two cases therefore the diagnosis was not made during life.

As result of the stone formation, chronic catarrh of the pancreatic ducts developed, the ducts becoming dilated and filled with watery mucus or purulent contents. This resulted in a diffuse inflammatory infiltration, indurative transformation, and final destruction of the entire organ. Usually the stones were multiple and ranged in size from that of lentil to that of hazelnut. KARRIS (2)

Kahn, M. H. The Diagnosis of Spleen Function. *Am. J. M. Sc.* 9: 2, div. 4.

The histologic details of the spleen are important as an indication of its function. The spleen sinuses are a dense plexus of capillary spaces. On one side they are in contact with the arterial capillaries and on the other with the veins. It is assumed that the blood entering the pulp from the arterial side must pass through the spleen sinuses before off through the veins. This transmigration is permitted by stomata in the walls of the sinuses. The capillaries of the spleen therefore are either in contact with the sinuses which in turn are connected with the veins or end directly in the pulp in contact with the pulp cells. The hemolymph glands are a special type of structure closely related to the spleen. After splenectomy they increase in size containing many large red blood cells free in the meshes of the reticulum and filling up the lymph channels between the follicles.

The parenchyma of the spleen consists of a mass of cells. According to their morphology a short reference to their origin the meshes of pulp cells are (1) small mononuclear lymphocytes, (2) mononuclear polymorphonuclear and multinuclear leukocytes, (3) nucleated red blood cells, (4) mature red

blood cells, (5) large cells enclosing red blood cells or pigment granules (phagocytes) (6) free pigment granules, (7) giant cells with megacaryocytes occurring only in young animals, and (8) blood platelets. The large leukocytes (2) are most numerous. The lymphocytes (1) are next in number and the phagocytes (5) are third.

It is possible that the malpighian follicles are the physiological place of origin of the functioning cells produced in the spleen. The theory that the different regions of the spleen have different functions is supported by the fact that X-ray radiation of rats first destroys the cells of the follicles, the pulp elements remaining unchanged until after a much longer exposure. The different reaction of pulp and follicle in the leukemias also supports this theory. In myeloma, the pulp shows hypertrophy whereas in the lymphatic form the follicle shows hypertrophy.

The determination of the various functions of the spleen has been based on (1) cytologic analysis of the blood, (2) chemical analysis of the blood, (3) the resistance of the red blood cells, (4) the relation of the hemoglobin to hematin and biliary pigments, (5) the relation of the spleen to iron metabolism, (6) the effects of splenectomy, (7) the effects of spleen feeding, (8) the effects of X-ray radiation and (9) the clinical signs of functional disturbance of the spleen.

The functions of the spleen are enumerated by the author as follows: (1) blood formation, (2) blood destruction, (3) role in iron metabolism, (4) a regulating influence on the blood producing organs, (5) function concerned with digestion, (6) a cholesterinogenic function, (7) internal secretion and (8) detoxication.

Blood formation. There is no doubt that the spleen is a leucopoietic organ. The venous blood of the spleen shows many more (seventy times as many) white blood cells than the blood of the splenic artery and many more than that of the vein of any other organ of the body. The number of polymorphs is greater in the splenic vein than in the artery whereas the number of mononuclear cells is greater in the artery. The focus of origin of lymphocytosis is the spleen follicle, and the lymphocytes circulate from here through the red pulp.

Blood platelets are not present physiologically in the liver lymph glands, or bone marrow, but are found in the blood channels of the spleen. Following splenectomy remarkable increase of these elements takes place in the parts mentioned.

The intramuscular injection of epinephrine contracts the spleen one third. Frey's adrenalin test for the hemopoietic function of the spleen consists of the subcutaneous injection of 1 mgm. of adrenalin. It is assumed that normally a distinct increase of leukocytes in the peripheral circulation with relative lymphocytosis takes place in twenty minutes. In one hour there may be a still further increase. In disease of the spleen the increase of leukocytes is slight or absent and there is no relative

lymphocytes. This reaction is negative after extirpation of the spleen in dogs.

Blood destruction. Disintegration of the cells by fragmentation without loss of hemoglobin while they are still circulating has been found. The shape of these cells in the peripheral blood and the spleen is to some extent peculiar to the animal species. The constant presence in the spleen of an accumulation of polycytes which are subdividing and of microcytes, and the presence of these elements in the circulating blood indicate that the red cells disappear in part at least by fragmentation.

One normal function of the spleen therefore, is the selection of the red blood cells which are to undergo destruction and of those which are to continue in circulation.

The relation of splenic function to blood destruction and jaundice. When hemoglobin is set free in the portal circulation a larger amount is held by the liver and converted rapidly into bile pigment than is the case when it is set free in the general circulation. Under the former conditions, overloading of the liver with bile pigment occurs more readily and jaundice is more apt to develop. This mechanical influence accounts for the lessened tendency after splenectomy to the jaundice which follows blood destruction due to hemolytic agents. Whether the spleen is an active factor in destroying the erythrocytes, or whether it plays merely a passive part as a place for deposition of disintegrating cells, there can be no question that in this organ a large number of cells undergo their final disintegration after the action of hemolytic poisons. The hemoglobin there liberated passes by the portal system directly to the liver. When the spleen is removed, this disintegration occurs in other parts, notably the lymph nodes and bone marrow and the hemoglobin passes, not into the portal, but into the general circulation, from which it reaches the liver more gradually and in more dilute form.

In hemolytic jaundice there is excessive fragmentation and destruction of blood in the spleen liver system because the circulating erythrocytes are unusually fragile. There is however no bile in the urine, but bilirubin is found in the blood and urobilin in large amounts in the stools and the urine. The bone marrow shows signs of hyperfunctioning. One member of a family with this disease may have merely enlargement of the spleen without jaundice or marked anemia, while another may have an enlarged spleen, anemia, and urobilinogenuria but no jaundice and third may have all of these. The enlargement of the spleen may be a work hypertrophy. The jaundice is not a index of the gravity of the condition.

The role of the spleen in iron metabolism. Cheever believes that the source of origin of the iron conditions its distribution in the body and its output. He therefore speaks of an excretory tissue and an accumulative tissue. The skin, liver and kidney epithelium he places in the first class and the macrophages or Kupfer cells of the spleen and liver

the endothelial cells of the skin, and interstitial perivascular cells in the second class. These he names siderocytes. The spleen serves first as storehouse for siderocytes and second to stimulate the activity of siderocytes in other organs of the body.

The regulating influence of the spleen on blood products of organs. In some indirect way the spleen exerts a regulating influence on the blood producing organs, steadying the factors which direct normal production and destruction. Stradomsky seems to have demonstrated that the spleen has a fold hormone action on the bone marrow, is inhibiting action on the production of red corpuscles in the bone marrow and stimulating action increasing destruction of these cells. Normally these two influences balance each other but when the spleen hormone is abnormal or lacking the bone marrow produces unlimited quantities of red cells and their quality deteriorates. The immediate increase of all cells after splenectomy suggests the removal of some factor that either restricts the production of white cells or destroys those that have passed their usefulness.

The function of the spleen with regard to digestion. A definite peptinogenic function of the spleen has not been demonstrated. The relation of the spleen to gastric secretion is probably merely vascular, the diminution in the amount of the juice secreted after splenectomy being attributable to decrease of the gastric blood supply due to injury to the gastrosplenic circulation.

Internal secretion. The hypothesis that the spleen produces an internal secretion is supported by (1) the changes in the erythrocytes after splenectomy (2) the modification of the blood picture in hyperplasia of the spleen which, in some instances at least, is unassociated by splenectomy and (3) the specific effects on the red blood corpuscles of the injection of splenic extract. The chief function of the spleen is the removal from the circulation of the disintegrated erythrocytes, the splenic cells elaborate this material, producing an internal secretion from either the strom or pigment portion. This internal secretion reduces the resistance of all the red blood corpuscles, the effect amounting to actual destruction of the older cells. Finally this internal secretion possibly after modification by the liver stimulates the erythropoietic function of the bone marrow and is used up in the formation of new corpuscles.

Detoxifying function. The spleen is derived from mesoblastic tissue and is probably concerned largely with the filtration of certain substances from the blood, the product of its activities being delivered to the liver through the splenic vein.

The effects of splenectomy and compensation for splenic function. After splenectomy the lymph glands of the greater curvature of the stomach and the omentum become hypertrophied and distinctly red and new ones develop in the neighborhood of the extirpated spleen. Hyperplasia of the lymphatics also gradually develops, first in the vicinity of the

portal vessels and then inside the liver lobes. This hyperplasia is evidently a compensating process in the lymphatic elements in the depths of the liver and explains the increase in size of the liver which follows removal of the spleen.

Physical diagnosis of the spleen. T estimat the size of the spleen accurately Chausseff draws a line from the middle of the axilla to the trochanter region, the arm being held above the head. This line serves as the base from which the ovoid spleen is palpated and percussed and its outline marked on the skin. A line is then drawn from the base line axially, to the forward limit of the spleen. This axial line is bisected in the center by a line perpendicular to it. Measurement of these two lines gives the approximate size of the spleen.

Stefani A. Experimental Research on the Importance of the Spleen in the Production of Agglutinine (Ricerche sperimentali sull'importanza della milza nella produzione delle agglutinine). *Sperimentale*, 9, 1903, 36.

The author's investigations were made under the direction of Banti in the Institute of Pathological Anatomy in Florence. The experiments were made on normal and splenectomized rabbits. The typhoid bacillus was used as an antigen. The blood of the normal rabbits showed small quantities of agglutinins five days after the injection of the typhoid bacilli. These increased slowly for from twenty-four to forty-eight hours and then suddenly increased very rapidly so that the maximum was reached within two or three days. They then decreased for about twenty-five days until the agglutinating power was 100. In splenectomized animals the curve of production of agglutinins followed that of the normal animals but the maximum peak was much lower and the minimum was reached in from fifteen to nineteen days instead of twenty-five days.

W. A. BRYMAN

Krumpholtz E. B. and Musser J. H., Jr. The Effect of Splenectomy on the Hemopoietic System of Malariae Rhesus. *Arch Int Med* 93, 1903, 686.

Because of the diversity of results reported following splenectomy in different animals, Krumpholtz and Musser thought it advisable to study some of the changes produced in the hemopoietic system of the monkey by removal of the spleen. The monkey was chosen because it is the animal most closely related to man. The animals and the conditions under which the blood study was done were standardized as closely as possible and control monkeys are used in all of the experiments. The results are summarized as follows:

1. In the monkey, splenectomy produces an anemia which is less than that produced in man or the dog. The resistance of the erythrocytes is increased and the number of reticulated erythrocytes is diminished.

No signs of a blood crisis are found.

3. A slight increase in the total leucocyte count is associated with an absolute and relative increase in the polymorphonuclears and a decrease in the small lymphocytes.

4. The monkey is resistant to toluylenediamine hemolysis. Sodium oleate is too toxic for profitable use as a hemolytic agent.

5. At early periods after splenectomy, the bone marrow is slightly if at all, hyperplastic, but by the fifth month cellular hyperplasia is marked and continues marked for many months.

6. The visceral lymph nodes are more prominent after splenectomy.

The authors draw the following conclusions:

A transient post-splenectomy anemia results chiefly from lessened blood formation due perhaps to the loss, with the spleen, of a substance which normally stimulates the bone marrow.

The permanent increased resistance of the erythrocytes is one of the most important results of splenectomy from the point of view of therapeutics.

3. The changes in the bone marrow, the lymph nodes and the stellate cells of the liver of splenectomized monkeys indicate that these tissues take over the spleen's share in disposing of waste erythrocytes and their disintegration products.

4. The different response of various animals to splenectomy is partly explained by the difference in the relative spleen and body weights in the various species.

C. J. GAERTEL, M.D.

Eppinger H. The Splenomegaly of Hepatic Cirrhosis (Nostra opinio sobre la esplenomegalia de las cirrosis hepaticas). *Seminario Med.* 19, 3, 1903, 604.

In many cases of cirrhosis with splenomegaly splenectomy is an extraordinarily beneficial operation. As a rule such symptoms as icterus, pruritus, hemorrhagic tendency and anemia are favorably influenced and the improvement in the general condition may persist for a number of years. Therefore, splenectomy may cause regression of certain symptoms which up to the present time have been attributed to hepatic conditions alone. Extirpation of the spleen ought to have a favorable influence also upon the changes in the liver, but while the cirrhotic process may be arrested, there can be no question of cure.

W. A. BRYMAN

Cignoni, O. Malarial Splenomegaly and Its Complications (La splenomegalia malarica e sue complicazioni). *Falci*, Roma, 19, 3, 1903, 363, 371.

Cignoni reports his experience with splenomegaly during a period of twelve years.

He believes that the treatment of the enlarged malarial spleen adherent in its normal situation should be medical, whatever the volume of the organ. Because of the efficacy of such treatment and because of the physiological importance of the spleen, the greatest caution should be exercised in recommending splenectomy.

Surgical treatment is usually rendered necessary however by the complications of the malarial enlarged spleen. These include spontaneous rupture of the spleen, rupture due to trauma, rupture caused by penetrating wound splenic peritonitis, and subphrenic abscesses, parasitic cysts, chronic malarial enlargement of the ectopic spleen, ectopia of the spleen, with latent chronic malarial infection, splenic infarcts, and hematoma cyst in the ectopic malarial spleen, necrosis of the ectopic spleen with acute torsion of the pedicle, and subacute and chronic torsion of the ectopic spleen.

Cygnard has observed seventeen cases of splenomegaly with malarial complications of the types mentioned. Fifteen were treated operatively and 2 were not operated upon because of the critical serious condition. The operative mortality was 7 per cent. W. A. BARNES.

MISCELLANEOUS

Beck, H. G. Eventration of the Diaphragm. Report of an Instance and Discussion of the Clinical Aspects of the Anomaly. *Ann. Ch. Med.* 9:3, 36.

Prior to the introduction of roentgenology not a single case of eventration of the diaphragm which came to autopsy and reported in the literature was diagnosed during life.

The condition is rare occurring in relation to diaphragmatic hernia in the ratio of about 1 to 37.

Beck believes that although the symptoms may not appear until after the condition is congenital. He bases this opinion on the fact that it occurs in the newborn and is frequently associated with other congenital defects.

The chief diagnostic features are illustrated by case report. R. L. NEWELL, M.D.

Marr, A. T. Diaphragmatic Hernia. *U. S. Armed Forces Med.* 42:1, 135.

With the recent development of X-ray diagnosis, diaphragmatic herniae are found more frequently than formerly. In every case the attention of the diagnostician must be caught by some feature which indicates the need for roentgenological examination. Many excellent articles have been written recently on the subject because of the large number of traumatic diaphragmatic herniae which occurred during the war and because of the advance in diagnosis with the X-ray.

The author reports two cases. The first was that of a man 30 years of age. The hernial sac contained the lower half of the stomach and almost the entire duodenum. The second case was complicated by a self-tuberculous. Treatment of the complication has been recommended, and operation will be considered later.

The symptoms of diaphragmatic hernia vary according to the size of the hernia, the amount of constriction, the ring, and the organs or organs involved. They include reflex indigestion, ulcer of the stomach and obstruction of the intestine. Sometimes there may be no symptoms. Pressure on the heart may cause tachycardia and dyspnea. In some cases there is a hyperresonance or succussion where normal lung resonance should be present. The X-ray findings are usually conclusive. The arch of the diaphragm is clear and often higher than normal, and abdominal viscera protrude at the thorax. The hernia is usually located on the left side as the right side is protected by the liver.

There are two methods of approach in the treatment of this lesion—through the chest and through the abdomen. The former permits closer approach to the opening in the diaphragm and easier and more accurate suturing. Formerly the artificial pneumothorax thus produced was greatly feared but during the World War this as also the use of little incision port technique.

Abdominal complications and adhesions indicate that the approach should be made by a high right rectus or midline incision. In certain cases in which adhesions may be extensive in both the thorax and the abdomen the combined thoracic and abdominal incision may be necessary. MARSH R. HOOVER, M.D.

Witensky, A. O. Drainage in Intra Abdominal Infection. *Ann. Surg.* 92:3, 1930, 555.

The author suggests that an immediate microscopic examination of the exudate present in intra abdominal infections may serve as a basis for determining the necessity for drainage. A smear should be made of the exudate and stained by Gram method; the number of organisms present being estimated by an examination of several fields.

Of eleven cases in which varying degrees of inflammatory exudate was present, ten showed no organisms, and one only an occasional organism. None of these cases was drained, and the postoperative course in all of them was uneventful.

SMITH, L. LOW, M.D.

GYNECOLOGY

UTERUS

Pelak, J O: The Life History of the Double Uterus. *N York State J M* 9 3 xxi 7

The double uterus is the result of an arrested or faulty absorption of the septum between the two müllerian ducts. The two parts may be equal or unequal, and there may be a complete septum or mere vestiges of a septum between them. The following types are recognized: the uterus bicornis unicorns, the uterus bicornis, the uterus didelphys, and the uterus unicornis with rudimentary horn. In the uterus didelphys the two component halves are completely separate but each has only one tube, ovary and round ligament. The vagina may be either double or single. In the uterus bicornis the two halves are united to some extent at their lower ends. In the uterus unicornis there is an undeveloped horn attached to the main body of the uterus just below the level of the internal os.

There may be no symptoms to direct the attention of either the subject or the physician to the anomaly. Menstruation is seldom altered, though it may occur every two weeks, every month, or only once in every two months. Sterility is comparatively uncommon. Miscarriage and premature labor are very common. Pregnancy may occur in one horn or in both horns of the uterus, and superfetation is possible.

Labor is frequently normal, but many abdominal complications are reported. Obstruction or rupture may occur. The presentation is often abnormal; the transverse position is frequent. Abortion and postpartum bleeding are common. The double uterus is prone to infection as uterine drainage is always impaired. When pregnancy takes place in the rudimentary horn of a bicornate uterus conditions comparable to an ectopic pregnancy may be brought about. The syndrome is very constant and suggestive viz. the usual signs of pregnancy with recurrent shooting pain through the affected side, persistent unilateral tenderness in the lower abdomen, and an increasingly sensitive tumor.

H W FRY, M D

Boldt, H J: The Kielland Operation for Prolapsed Uteri. *Surg Gynec & Obst* 9 3 xxxvi 743

Kielland asserts that in more than 50 cases subjected to his operation he has not seen one recurrence. The technique described has been used since 1909.

Kielland's modification refers principally to the treatment of the vaginal portion. This is not amputated but is utilized to prevent recurrence. The extension of recurrence depends, not upon lifting, suspension, or fixation of the vaginal portion, which may be loosened by subsequent intra-

abdominal pressure but upon static factors. The position of the uterus is straight and parallel with the axis of the vagina. Intra-abdominal pressure acts on the posterior surface of the uterus and transversely to its long axis. Therefore it presses the uterus against the posterior vaginal wall rather than out of the vaginal outlet.

Kielland claims that as no levator suture is used unless rectocele is present, the results prove that levator suturing is not necessary.

Twelve illustrations show various points in the technique of this operation. C H DAVIS

Bell, W B: Intrinsic Dysmenorrhea. *J Obst & Gynec Brit Emp* 9 3 xiv 9

By the term intrinsic dysmenorrhea the author designates the pain which is due to some inherent abnormality in the structure of the organs of menstruation or the physiological processes connected with that function. The term extrinsic dysmenorrhea is used to denote the menstrual pain due to the presence of acquired pathological lesions in or near the pelvic viscera.

The pain in intrinsic dysmenorrhea may be premenstrual or both premenstrual and intra-menstrual. Very rarely is it intermenstrual.

Intrinsic dysmenorrhea may be due to one of the following local causal factors:

A Morphological anomalies

Underdevelopment of the uterus

Underdeveloped uterus of normal shape.

Underdeveloped uterus with or without underdeveloped ovaries, with a conical cervix and pinhole os externum or a hypertrophied cervix.

Underdeveloped uterus with acute flexion (cockle shell uterus).

Gross malformations

Divided uterus, due to imperfect fusion of the müllerian ducts.

Atresia of the cervix or vagina with a single or divided cavity.

Accessory occluded uterine cavities.

B Physiological anomalies

Intra uterine clotting of menstrual blood with the expulsion of blood casts of the uterine cavity.

Excessive exfoliation of the endometrium (membranous dysmenorrhea).

HARRY W. FRY, M D

Mosker, S. R.: The Practical Management of Dysmenorrhea. *Boston M & S J* 9 3, clxxxviii, 000

From the clinical point of view there are undoubtedly different types of dysmenorrhea, and

some sort of grouping must be attempted before the problem can be handled. As pathologic classification is inadequate in a condition which often presents no anatomical pathology, a grouping by symptoms offers the most satisfactory working basis.

From the latter viewpoint cases of dysmenorrhea fall into 2 groups. I, the first which the author calls Group A, the clinical picture is as follows:

The pain begins from twenty-four to forty-eight hours before the flow. It is frequently relieved as the flow becomes well established but may persist throughout the period. In character it is dull, dragging, not constant, and is felt throughout the lower abdomen. It is very often accompanied by backache and sometimes by pain in the thighs. Nausea, vomiting, and headache are frequent. The amount of the flow is sometimes normal, but often increased. Leucorrhoea and other intermenstrual pelvic symptoms are common.

This will be recognized as the picture of chronic passive congestion of the pelvis, upon which each menstrual period superimposes an acute phase. Even the headaches and gastric symptoms commonly called reflex, may be due to congestion of the meninges and gastric mucosa resulting from an abnormal endocrine sympathetic balance. This type of dysmenorrhea is nearly always accompanied by definite pelvic pathology. The list of conditions commonly responsible include pelvic inflammation, in situ phlebitis, chronic passive congestion from faulty sexual hygiene, fixed retroversion flexion of the uterus, fibroid tumors, and occasionally severe chronic constipation. The onset of this type of dysmenorrhea is usually subsequent to puberty and coincides with the development of the underlying abnormality. Causes. Group A form about 5 per cent of typical dysmenorrhea. Among married women they are relatively much more common. In general, cases of this type may be expected to become *more* rather than *better* after marriage.

The clinical picture of Group B is very different. The pain begins previous to the flow—at any rate, not more than an hour or two before or after. Ordinarily it lasts only a few hours. In character it is usually intermittent, spasmodic, and cramp-like, though occasionally it is described as burning or boring pain. It is nearly always felt in the lower mid abdomen over the uterus. Nausea and vomiting are fairly common, but headache relatively uncommon. Marked edema and general nervous irritability are often encountered. The amount of the flow is usually normal, but sometimes diminished. Intermenstrual pelvic symptoms are as a rule absent.

This type of condition is best classified as disturbed reflex. The painless, easy rhythmic uterine contractions of normal menstruation are replaced by irregular, spasmodic, and painful contractions producing usually typical cramp or colic and occasionally steady tetanus-like pain.

The cause of disturbed reflex may be located on the afferent sensory limb of the reflex arc, in the central nervous system, or on the efferent motor limb of the arc. Among dysmenorrheas of Group B are cases in which the disturbance is in each of these localities, and on this basis Group B is divided into Subgroups B₁, B₂ and B₃.

In Subgroup B₁ the reflex is upset by excessive sensory stimuli coming from the endometrium and evoking corresponding excessive motor responses from the uterine muscle. Any endometrial condition which produces local irritability may be responsible—polyps, small submucous fibroids, or the so-called *endolitis endometris* which gives rise to membranous dysmenorrhea. The symptoms of this subgroup is that of Group B in general plus somewhat increased menstrual flow containing clots or membrane and often intermenstrual leucorrhoea. Subgroup B₁ includes about 50 per cent of vaginal cases.

In Subgroup B₂ the reflex is overactive because of conditions in the central nervous system. The condition is characterized by general nervous hyperirritation of which the patient may or may not be conscious, and increased nervous irritability, a low threshold of stimulation and a diminished resistance at the synapse. About 60 per cent of vaginal cases belong to this group. Pelvic pathology is absent. The development of this state is favored by the complex conditions under which the modern girl lives. The strenuous life, scholastic, industrial, or social, is the rule. When to this are added irregular hours, unbalanced diet, and lack of exercise it is surprising that nervous instability in girls is not more common. Cases in this subgroup present the general symptoms of Group B. There is no suggestion of pelvic pathology.

The remaining 50 per cent of vaginal cases belong to Subgroup B₃ in which the cause of the disturbed reflex action lies in the musculature of the uterus. The most frequent condition present in these cases is pelvic phlebitis.

This subgroup is to be distinguished by certain symptoms in addition to the usual ones of Group B. Pain of the sternal, burning or boring type located directly over the uterus is fairly common. The flow is to be distinguished by quantity and irregular and interrupted. It may contain clots.

The preliminary step in all cases of Group A is to remove if they are present two defects—(1) uterine sexual hygiene in the married and chronic constipation. Both conditions are fruitful sources of pelvic congestion and their adjustment will sometimes result in permanent and complete cure of dysmenorrhea of this type.

A satisfactory regime for ordinary cases includes the following: (1) uterine which are given in the order of their importance: (2) the enlisting of the patient's interest and co-operation; (3) regularity of habit; (4) large fluid intake; (5) diet; (6) abdominal exercise and massage; (7) small doses of liquid petrolatum at the beginning of treatment.

In Subgroup B1 as in Group B generally, very useful palliative remedy is found in the benzyl esters, which relieve the cramp-like or colicky type of pain arising from the spasmodic contraction of smooth muscle.

The radical cure of this type of dysmenorrhoea depends necessarily upon local treatment of the endometrium. The first step is an examination with dilatation of the cervix and the rough exploration of the uterine cavity.

In Subgroup B2 benzyl benzoate serves very well as palliative agent for the relief of the cramp-like pain. If the patient is definitely of the nervous type it is well to order 30 gr. of sodium bromide three times a day for a week before the period. When nausea and vomiting are conspicuous symptoms, good results are frequently given by corpus luteum, administered in 5 gr. doses three times a day during the premenstrual week.

The keynote of treatment leading to radical cure in Subgroup B is attention to the general health and hygiene.

The element of suggestion is not to be overlooked. Many girls have been taught by the older generation to regard themselves as semi-invalids during the menstrual period, and in the course of time an abnormal attitude develops which is mental more than physical.

In Subgroup B3 the palliative action of benzyl benzoate may be tried. To give permanent relief in the type of case presenting hypoplasia of the uterus is a slow and sometimes a difficult matter. The usual treatment includes two items—pelvic exercises and endocrine therapy. The latter cannot be regarded as established on a scientific basis, but must be carried out empirically.

C. H. DAVIS, M.D.

Foredike, S. The Treatment of Severe and Persistent Uterine Haemorrhage by Radium, with Report upon Forty Five Cases. *Proc Roy Soc Med Lond* 1923 xvi, Sect Obst & Gynec 69.

The methods advocated for the treatment of severe uterine hemorrhage are (1) hysterectomy, (2) X-ray treatment and (3) radium treatment. The analysis of a report of forty five cases treated with radium tends to show that this is the method of choice.

Of the forty five patients, twenty six had undergone some form of operation or combination of operations including dilatation and curettage, the removal of polyp, amputation of the cervix and oophorectomy or salpingo-oophorectomy. Some of them had been cured more than once. The rest had had medical treatment for variable periods or were so anemic that any further effort of palliation was contra-indicated.

In all cases dilatation of the cervix and an exploratory curettage were done and when the cervix and vagina were septic preliminary cleansing treatment was given. In all cases the radium was placed in the uterine cavity and only the gamma

ray was used. The vagina was packed with gauze moistened with liquid paraffin to support the radium and to keep the bladder and rectum away from the source of energy. To maintain the bladder in flaccid condition a self-retaining catheter was introduced. In some cases it was necessary to stitch the vulva to support the vaginal plug.

Three of the patients were between 20 and 26 years of age, ten between 27 and 38, twenty-two between 39 and 50, and ten between 51 and 55.

In the cases of patients between the ages of 20 and 65 mgm. of radium were used for five hours. In the others, 100 mgm. were employed for twenty-four hours. Foredike believes that 100 mgm. is an unnecessarily large quantity as in some later cases 75 mgm. had the desired effect.

After the treatment there was no further loss of blood in ten cases, no period in seventeen, two in eleven and three in four. In five cases a second treatment was necessary. In three of these there was little doubt that the first exposure would suffice but the patients were so thoroughly frightened by two prolonged shows of flowing the first exposure that it was considered advisable to comply with their demands. In only two of the five cases was anaesthesia necessary.

The only contra-indication is previous pelvic inflammation. This is a very real danger as the pelvis may become filled with an inflammatory tumor massing into the abdomen, the nucleus of which is an abscess deeply seated in the pelvis and nearly impossible to deal with.

The author's conclusions are as follows:

Radium treatment is the method of choice in all uncomplicated cases of severe and persistent hemorrhage due to chronic metritis. Inflammatory disease of the tubes and ovaries constitutes the sole contra-indication.

As a rule the radium menopause is not accompanied by any symptoms attributable to action upon the ovaries.

Radium treatment causes the least disturbance of the patient's economic life. C. H. DAVIS, M.D.

Doals, F. Histological Pictures Representing the Cure of Uterine Benign Cellular Epithelioma. *Arch Radiol & Electroltherapy* 1923, xxvii.

In proportion to the intensity of the action of the irradiation upon the cancer cells of the uterine basal-cell epithelium the following phenomena, which are not found in cases of spontaneous degeneration, are observed:

Massive and rapid karyorrhexis of the cancer cells without intervention of the part of the blood cells or profound degeneration of the normal tissues.

Progressive necrosis caused by pyknotic or chromotous with eosinophilic vacuolization of the protoplasm and phagocytosis by polynuclear blood cells. This well marked phenomenon is here especially characteristic of the action of irradiation.

3. The transformation of the cancer cells into giant cells and giant nuclei, an alteration which

may lead to necrosis with invasion by polymuclear leucocytes or to gradual atrophy with fatty degeneration of the protoplasm and disappearance of those elements without the participation of leucocytes in the process.

Irradiation, especially radium irradiation, first affects the nucleus, causing actual rupture comparable to its effect on the lymphocytes, or the destruction of the nucleus which is sometimes combined with eosinophilia or the megakaryocyte shaped degeneration which seems to result from nuclear fission due to loss of karyokinetic power.

The author's observations lead him to the conclusion that the polymuclear leucocytes occur only in association with spontaneous degeneration or radiotherapeutic transformation of the basal-cell epithelium as a consequence of incidental infections or the necrosis of cancer cells, and that they do not take an active part in the elective regression proper. It must be admitted also that the connective tissue has no active participation in the regression proper and that elective reaction against the cancer proliferation or its agent must be ascribed to the infiltration of lymphocytes.

4. The appearance of giant cells without the characteristics of malignant tissue, sometimes with distinct follicular shape, and the appearance of true histologic follicles following radium irradiation of cancer almost suggest that a substance is liberated to which the body reacts by lymphocytic infiltration and the formation of giant cells. In this connection the histologic findings noted upon the healing of the follicle induced by the experimental injection of killed Koch bacilli should be borne in mind, namely the formation of giant cells, fusion of the nuclei, the formation of megakaryocyte elements, and progressive liberation and atrophy of these megakaryocytes. These phenomena greatly resemble those observed in cancer regression.

The article is supplemented by twenty-two photomicrographs. C. H. Davis, M.D.

Martzell, K. H.: *Carcinoma of the Cervix Uteri. A Pathological and Clinical Study with Particular Reference to the Relative Malignancy of the Neoplastic Process as Indicated by the Predominant Type of Cancer.* *Bull. Johns Hopkins Hosp.* Balt. 933 xxxi 34 34.

The cells seen in epidermoid cancer of the cervix fall morphologically into three large groups: transitional, fat spindle-cell, and spinal-cell groups.

In the cases reviewed the vaginal mucosa was involved in over 50 per cent, irrespective of the extent of the cervical involvement.

Secondary involvement of the corpus uteri in cervical cancer occurred in 4.3 per cent of the cases in which the entire length of the cervix was involved.

One third of all the patients seen during the first six months of symptomatic disease with the exception of those suffering from the spinal-cell type of cancer, had extension of the neoplastic process to the broad ligament.

Less than 10 per cent of the patients with broad-ligament involvement lived more than one year after operation.

The first symptom of the disease in almost 85 per cent of the cases studied was unusual vaginal bleeding, and in 97 per cent some form of unusual vaginal discharge (either bleeding or leucorrhoea) was the primary symptom.

Of all the cancers in the series 5.1 per cent occurred between the ages of 30 and 50 years inclusive.

Of the patients between 31 and 35 years of age, inclusive, 8.6 per cent are living and well today. This is the highest cure incidence for any five-year age period in this study.

Of these patients 3.4 per cent gave a history denying pregnancy at any time and any form of vaginal instrumentation.

In 58.8 per cent of the patients operated upon, no showed broad ligament induration on physical examination, this finding signified carcinomatous extension.

The incidence of cures was almost twice as high in the cases treated by abdominal panhysterectomy as in those in which a vaginal panhysterectomy was performed.

The total operability of the cases in this study was 46.5 per cent.

The total operative mortality was 4 per cent. The operative mortality in the Johns Hopkins Clinic at the present time is between 6 and 7 per cent.

Preliminary curettage performed several days prior to the radical operation for cancer was the procedure employed for 36.8 per cent of the patients who are now living and in good health. From this it may be concluded that a diagnostic curettage not immediately followed by radical operation for extirpation of the malignant process does not by any means render the prognosis hopeless.

The transitional and fat spindle cell types of cancer frequently become inoperable early in the disease, and the spinal-cell type and adenocarcinoma arise before the fifth month.

Eighteen and seven-tenths per cent of the patients operated upon and traced are living and well today.

So-called five-year cures are obtained in 26.6 per cent of the cases.

In this study there was no epidermoid cancer of the cervix conforming to basal cell cancer of the skin in regard to its apparent lack of malignancy.

The histomorphology of the predominant types of cells in epidermoid cancer of the cervix is important in that it indicates the relative malignancy of given tumor. In this study the spinal cell type of cancer proved to be the least malignant. The transitional cell type was next in order of increasing malignancy and the fat spindle-cell type the most malignant of all.

In malignancy the adenocarcinoma falls in between the spinal-cell and transitional-cell groups of epidermoid cancer.

Epithelial pearls are of significance only when they are associated with cancers of the spinal cell type. They then appear to indicate a lessened malignancy of the cervical new growth.

This very careful analysis of 387 cases of carcinoma in the wards of the Johns Hopkins Hospital prior to 1920 is summarized in fourteen tables. The article contains also ten photomicrographs.

C. H. DAVIS, M.D.

Polak, J. O., and Pfaffen, G. W.: What Constitutes the Surgical Cervix? *Am J Obst & Gynec* 9:3 630

The pathologic significance of a tear is not so much its extent as the changes resulting from infection caused by the invasion of bacteria from the vagina, the associated subinvolution, and the passive hyperemia due to the fact that the heavy uterus is always out of the plane of the circulatory equilibrium.

More than half of all cervical injuries present some of these pathologic changes, except perhaps a papillary erosion. The so-called erosion is not an indication for surgery unless it is on the lips of an everted, hyperplastic, indurated cervix.

The authors classify cases into those with (1) erosion and gland infection without loss of tissue (2) tears with considerable loss of tissue (3) cervical hypertrophy and hyperplasia with induration (4) cystic degeneration (5) deep bilateral tears with erosion and (6) stellate or multiple lacerations.

In cases of hypertrophy (intravaginal infection) cystic changes with surrounding hyperplasia, and operation for prolapse in a woman who has passed the menopause, trachelectomy is necessary.

Whenever possible, trachelectomy should be avoided during the child bearing period as it predisposes to abortion in subsequent pregnancies. Tracheloplasty has not the same effect on pregnancy and is not so often a cause of premature labor and dystocia during delivery.

The ordinary erosion will usually yield to applications of the actual cautery to destroy the excessive hyperplastic growth.

Cases of chronic infection of the glandular structures penetrating to a considerable depth the authors treat by the intracervical application of 5 mgm. of radium in capsules for short exposures.

Proper preliminary treatment carried out over a period of weeks before operation will often so improve the local condition, rid the cervix of its contents, destroy cysts, and cure the infection as to render trachelorrhaphy possible, whereas if no preliminary treatment is given amputation of the cervix may be necessary. It is because of the lack of such preliminary treatment that many cervical operations fail to cure the glandular infections and the associated parametritis.

Tracheloplasty has cured tenibly due to excessive cervical hypertrophy or abnormal cervical discharge.

In a certain percentage of cases tracheloplasty and amputation of the cervix have been followed

by pregnancy. In some instances the pregnancy resulted in abortion or premature delivery but in others was terminated by labor at term.

In 50 per cent of the cases of surgical conditions of the cervix operation will not cure the leucorrhoea unless long course of preliminary local treatment is given.

Only a relatively small number of cases of sterility are cured by surgical treatment of the cervix. Therefore operation should be done only after a Huhner and a Rubin test have shown that the cause lies in the biochemical changes in the cervical discharge.

EDWARD L. CORVELL, M.D.

ADNEKAL AND PERI UTERINE CONDITIONS

Marcus, M.: The Radiation of Pain in Lesions of the Fallopian Tube. *Br J J* 9:3:1, 85

While the physical signs of disease of the fallopian tube have been minutely described, it is of importance to differentiate more clearly between the subjective symptoms of this condition and those of local peritonitis in the same region. Disease of the tube is evidenced by pain referred to the skin over the area supplied by the spinal segments from which its innervation is derived. According to Head, these segments are the eleventh and twelfth dorsal and the first lumbar but sometimes the area is wider. Pain over the skin area of the loin, in the iliac fossa, and passing down the anterior surface of the thigh to the knee is a localization sign of considerable value.

The author cites six cases in which there was pain in the iliac fossa and on the anterior surface of the thigh. This localization of skin hyperaesthesia suggests that the tube is represented in the spinal cord by the eleventh and twelfth dorsal and the first three lumbar segments. V. E. DEWEAR, M.D.

Natanson, J. H.: Autoplastic Ovarian Transplantation. *Br J J* 9:3:1, 95

The following case report is of interest because the patient has been under observation for thirteen years after the operation for transplantation of the ovaries and a macroscopic and microscopic examination of the transplanted glands was made nine and one half years later.

A caesarean section was performed on the patient, then 7 years of age, for the delivery of a 6 lb baby. This operation was necessitated by tuberculosis of the hip. To prevent further conception, the ovaries were transplanted into the anterior abdominal wall.

Subsequently because of the strenuous use of crutches, ventral hernia developed in the upper part of the scar. In 1920, a fit of coughing caused pain and swelling at the site of the hernia and a diagnosis of irreducible strangulated hernia was made. At operation for the hernia the transplanted ovaries were inspected and a small piece was removed for examination. The ovaries were firmly adherent to the surrounding tissues, and graafian follicles

could be seen and felt. When these were pricked with a knife, liquor folliculi escaped. Microscopic examination showed normal ovarian tissue with a rich blood supply.

The patient has menstruated regularly and her sexual life has been normal. During menstruation the ovaries are slightly tender.

I. EDWARD BARKOW, M.D.

MISCELLANEOUS

Berger, K. The End-Results of the X-Ray Treatment of Cancer of the Freiburg University Gynecological Clinic, 1913-1916 (Erfolg der Strahlentherapie des Krebses an der Freiburger Universitätsfrauenklinik, on pp. 396). *Strahlentherapie*, 1918, XIV, 446.

This article is a review of the results obtained in the cases of carcinoma radiated by Kroening in the period from December 9, 1913, to December 9, 1916, and is a supplementary report to the review by Mueller-Carnob on the results obtained by Kroening in cases of carcinoma treated surgically.

The maximum incidence of carcinoma of the breast falls between the fortieth and forty-fifth

years of age, and that of carcinoma of the cervix of the uterus between the fifth and fifty-fifth years. The average age at which carcinoma of the breast develops is 53.4 years, while that of carcinoma of the fundus of the uterus is 57 years and that of carcinoma of the cervix 56 years.

Of fifty-six carcinomas of the breast treated by radiation, eight remained cured at the end of five years. The average length of life as thirty-five and three tenths months after the beginning of the disease and twenty-eight months after the beginning of treatment.

Of eighteen cases of carcinoma of the fundus of the uterus, six remained cured at the end of five years. The average length of life after the beginning of the disease as thirty-eight and six tenths months, and after the beginning of treatment thirty and nine tenths months.

Of seventy-six cases of carcinoma of the cervix, six remained cured after five years. The average length of life after the beginning of the disease as twenty-one and four tenths months, and after the beginning of treatment, sixteen months.

These cases represented all stages of the disease. SEIGER (Z)

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Day H. F. Diet During Pregnancy. *Bull. W. & S. J.* 9, 3, 1934, 904

In order to regulate the weight of the mother and baby and to control such symptoms as nausea, vomiting, constipation, and hyperacidity the term of pregnancy is divided into trimesters and suitable diet is offered for each period.

In the first period the mother's general nutrition is most important on account of the frequent morning sickness. Calcium deficiency during this period may be the cause of miscarriage.

The second period is usually one of normal metabolism, but here again the calcium supply must be watched because of the deficiency produced by the calcification of the child's teeth.

The third period is the period of rapid growth of the fetus and inactivity of the mother due to the increased size and weight of the uterus.

First considered in the diet are the vitamins: (1) fat-soluble A, (2) water-soluble B, (3) water-soluble C, and (4) D or X, which is essential to reproduction. Next are the minerals, iron, calcium, and phosphorus, and then the carbohydrates, proteins, and fats.

Twenty-five cases are cited in which the average weight gain during pregnancy was 4 lbs. instead of the usual 20 lbs.

The article is concluded with very comprehensive list of foods showing the amount of protein and minerals in each portion and a number of well-balanced menus suitable for each period of pregnancy.

WILLIAM B. CAMPBELL, M.D.

Williams, P. F. Pregnancy and Labor in Very Young and Elderly Primiparae. *Atlantic M. J.* 9, 3, 1934, 456

From this study it appears that adolescents are able to stand the strain of pregnancy labor and lactation as well as older women. They seem to bear well the brunt of the enormous physical and mental changes of pregnancy and, in many instances, even while earning their livelihood and conducting their condition. The peculiarities of these girls reflect to certain degree their immaturity and perhaps, in some instances, their lack of proper nutrition and care in the formative stage. Their labors fall well within the normal limits of time. The power of expulsion is apparently as well developed as in older women.

The average weight of the infants is somewhat below normal, although variations above that level are sometimes remarkably high. Pregnancy is of normal length and but little assistance is necessary at term. The puerperium is noticeably uneventful.

The youthful mammae functionate normally and in the majority of cases the breast-fed infants do well while under observation.

Similarly the cases of four elderly primiparae which were observed by the author refuted the belief that reproduction in the extremely old primipara is fraught with difficulty and danger.

C. H. DAVIS, M.D.

Turk, F. B. The Pathologic Reaction of Tissue Extract (Cytost) Liberated in Pregnancy. *Am. J. Obst. & Gynec.* 9, 3, 1939

It has long been known to biologists that a toxemia from disintegrating tissue occurs during pregnancy and to a lesser extent during the menstrual periods, adolescence, and the climacteric. In pregnancy both the mother and fetus are affected. The toxin is specific to the species.

The specific antitoxin for this tissue toxin has also been known for some time and has been used to produce immunity.

The findings of the author's experiments taken in conjunction with those of hundreds of others of similar character has led Turk to the conclusion that he has demonstrated that low concentration of homologous cytost stimulates cell mitosis and metabolism. Further that it directly affects the germ plasma cell and thus determines congenital conditions and heredity.

High concentration of homologous cytost produces the opposite or retrograde effect on the cell, causing degeneration and metabolism of the germ plasma cell.

The results of numerous experiments are recorded.

E. L. CORRELL, M.D.

Dooley E., and Rochat R. The Diagnosis of Tubal Pregnancy. Cornual Pregnancy (Sur la diagnostic de la grossesse tubaire la grossesse angulaire). *Gynec. et Obst.* 9, 3, 1934, 6

Tubal pregnancy is rarely diagnosed until the appearance of complications.

Many cases diagnosed as tubal pregnancies are in reality cornual pregnancies. If the ovum becomes attached to the uterine mucosa at one of the horns it is erypt to atrophy develop irregularly or become cast off and expelled. In a cornual pregnancy the uterus is not enlarged evenly. The affected horn is soft and distended. Hegar's sign is absent, but at the base of the gravid horn there is a soft band which gives the horn an independent motion relative to the uterus. Bar calls this the superior sign of Hegar.

Bimanual examination gives the impression of a double swelling. One swelling is the uterus, which is somewhat larger than an empty uterus, and the other is the gravid horn. The gravid horn is softer

than the uterus except during contraction when it may be harder than the uterus (funda). After the eleventh week the uterus gradually assumes the form noted in a normal pregnancy.

Cornual pregnancy is usually associated with unilateral pain in the lower abdomen, and frequently with slight amount of irregular bleeding which often leads to error in diagnosis.

The authors report three cases to show how easy it is to confuse cornual with tubal pregnancy.

In order to diagnose lateral fixation of the gravid uterus the patient is placed in the Trendelenburg position. In cornual pregnancy the enlargement is often antero-lateral, while in tubal pregnancy it is usually posterior and often in the pouch of Douglas. In cornual pregnancy the broad ligaments will be felt beyond the uterus.

Interstitial pregnancy is a pathologic rarity which cannot be differentiated clinically from cornual pregnancy before rupture. The usual course of the former is to abort or rupture while that of the latter is toward normalcy.

When the diagnosis is doubtful as to whether the pregnancy is in the tube, the uterine wall, or the horn, the best procedure is to keep the patient under observation. If this is impossible, it is safer to make an exploratory laparotomy.

Roscoe J. Jenson, M.D.

Hayd, H. E., and Potter, I. W. The Symptoms and Signs of Extra Uterine Pregnancy At or Near Term, with Report of Two Cases and the Treatment of Late Ectopic Gestation, Together with a Review of the Literature and Recorded Cases. *Am J Obst & Gynec* 9, 3, 60.

In the first case reported both the mother and infant died. No operation was performed. The ectopic pregnancy was diagnosed at autopsy. The second patient was operated upon and both the mother and baby are living and well.

In these two cases there were none of the signs of violent rupture of the tube at the sixth, eighth, or tenth week. The women had not lost blood in the early weeks to make them doubt that they were pregnant and their condition was much the same as that in the early months of intra uterine gestation. They continued to be about until the adhesions which had formed between the bowels and the fetal envelope caused the sudden and alarming symptoms of partial or complete obstruction. In pregnant women who have not been subjected to a previous intraperitoneal operation, obstruction of the bowels is very rare because the pregnant uterine body is smooth and freely movable and when lifted up, adjusts itself to the distending influences of bladder and bowels in its progressive development.

In neither of the cases reported were the attendants impressed by the loud heart sounds and their more superficial character by the fact that the baby lay to one side, by the fact that the extremities were more palpable than usual or by other signs and symptoms given in the classical description of this

condition. On vaginal examination they felt a cervix harder in consistency and outline than was to be expected in uterus at term and the resistance to the examining finger of a hard body suggesting small fibroid tumor low down in the pelvic outlet. Therefore diagnosis of fibroid tumor complicating pregnancy was made and operation was advised.

Extra-uterine fixation usually calls for surgical relief as soon as possible, whether the embryo is viable or not. If the pregnancy has passed beyond the seventh month, however, the surgeon may wait until the baby is stronger provided the patient is in good condition and can be kept under close observation.

If the mass can be tied off at both ends, an attempt should be made to remove the sac and placenta. This may be possible if the pregnancy is tubal or tubo-ovarian. If there be much oozing or bleeding, the sac should be packed with 5 per cent iodoform gauze and the placenta left in situ or the sac sewed to the abdominal wall, in which case very great caution must be exercised not to disturb the placenta by pulling or tugging on it until it is free in the sac cavity.

The article is concluded with a record of thirty authentic cases in which an extra uterine child, as born alive and lived thirty days or longer and the mother also survived. EDWARD L. CORNWELL, M.D.

LABOR AND ITS COMPLICATIONS

Arnold, J. O. De Present Day Efforts Toward the Elimination of the Second Stage of Labor. *Constructive Forward Step in Practical Obstetrics Therapies* Ges 9, 3, 33, 34, 35, 36.

The author routinely gives morphine and hyoscine in repeated doses during the entire first stage, which prolongs the time of cervical dilatation but decreases trauma to the cervix. He then decides upon the method of delivery—whether it shall be vaginal or abdominal. Vaginal delivery may be effected by forceps or Potter's method.

The advantages of the surgical delivery are the removal of the dread of future pregnancies and the conservation of physical strength by preventing exhaustion, trauma and shock.

WILLIAM B. CAMPBELL, M.D.

Drouin, L. A Discussion of the Factors Influencing Breech, Cephalic, and Transverse Presentation. *Internat J Surg* 9, 3, 33, 34, 35.

Normal presentation is cephalic because the ovum is usually implanted in the upper segment of the uterus and the cord is attached to the lower portion of the fetal abdomen, tending to suspend the fetal head downward.

The basis of abnormal presentations is the law of flotation. According to this law a solid body immersed in a liquid fulfills one of three conditions according to whether it is lighter or heavier than the liquid in which it is immersed. If it is lighter it floats, if it is heavier it sinks, and if it is of the same density as the liquid it remains suspended. This law operates when the fetus and cord are too long

for suspension and the fetus floats and rises to the upper limits of the uterus with its lighter extremity or breech at the top and its heavier extremity the head at the bottom. Then, according to the law of hydrostatics, the pressure at the lower uterine segment becomes greater than that in the fundus, and by uterine contractions and fetal movements the fetal head is forced up and the breech down.

Failure of absorption of the amniotic fluid which is probably the cause of hydrannius, predisposes to abnormal presentations, as do also large fetal head and narrow pelvis.

WILLIAM B. CAMPBELL, M.D.

Cameron, B. J. The Technique of Cesarean Section. *Proc Roy Soc Med Lond* 93, xvi, Sect Obst & Gynec 5.

Whitehouse, B., and Featherstone, H. A Note on Two Cases of Cesarean Section under Spinal Anesthesia with Tropacocaine. *Proc Roy Soc Med Lond* 93, xvi, Sect Obst & Gynec 55.

Cameron describes the technique used in 107 cases of cesarean section in which there was only one death. All of the women were rachitic. The incision was made through the rectus sheath on the right side and gauze was packed between the uterus and the parietal peritoneum. When the uterus had been opened the child was delivered as a breech. The uterus was then drawn through the wound and laid on the abdominal wall, where it was turned inside out so that the membranes were expelled. It was then closed with three sutures of silk which were passed through all but the inner layer and superimposed with interrupted catgut sutures. Cameron never operates when the membranes have been ruptured for more than twelve hours or repeated vaginal examinations have been made.

Whitehouse and Featherstone report two cases of cesarean section performed under spinal anesthesia with favorable results. The anesthetic was tropacocaine in 3 per cent solution. The infants are in good condition and the tone of the uterus was preserved. One of the women was diabetic and the other had placenta previa. Both of these patients made an uneventful recovery.

H. W. FISK, M.D.

PURPERIUM AND ITS COMPLICATIONS

Watson, B. P. The Treatment of Puerperal Infections. *Edinburgh M J* 93, xxx, Sect Edinburgh Obst Soc 68.

Recent experience in the treatment of septic wounds has shown that the most important factor is free drainage, and the fewer the antiseptics used and the less the interference the better. In the infected uterus the cervical canal always remains patulous and drainage is assured. It may be helped by placing the patient in the Fowler position and by administering ergot, pituitrin, and quinine. The application of an ice bag to the abdomen will relieve any pain that may be present and reduce

fever. A free liquid diet should be given, the bowels should be kept open but not severely purged, and if possible the patient should be kept in the open air. Blood cultures should be made at intervals. If there is accumulation of fetid discharges in the vagina a gentle vaginal douche may be given.

The great majority of puerperal infections will yield to this type of treatment. If extension takes place it will become evident in the course of a day or two. A cellulitis should be evident to bimanual palpation in three or four days; a pus tube a little later. As a rule a cellulitis will resolve in a few weeks. In a few cases, however, suppuration will occur and the pus must be evacuated through the vagina or extraperitoneally through the abdominal wall. In cases of pus tube removal should be delayed, if possible until the temperature has reached and remained normal for some time. If the temperature remains high and the patient's general condition is deteriorating, the pus may be evacuated through an incision in the posterior fornix, the tube being removed at a later date if necessary. If there is evidence of peritonitis, an incision may be made in the posterior fornix and drainage established.

Thrombophlebitis is evidenced by wide excursions of temperature, repeated chills, and the palpation of thickening on one or both sides of the uterus. Such cases may be dealt with by ligation of the ovarian or common iliac veins. This somewhat heroic treatment has been carried out by many operators with surprisingly good results. If there is evidence of local bacera formation in the uterine wall, hysterectomy may be performed.

What has been said regarding the treatment of puerperal infections occurring after a full time delivery applies equally to those arising after complete or incomplete abortion. When abortion is followed by fever, curettage of the uterus and intra-uterine manipulation are contra-indicated unless there is severe hemorrhage. If the abortion is incomplete and mass is felt projecting through and blocking the cervical canal, the mass may be very gently removed.

If after the temperature has been normal for several days the persistence of bleeding and the patulous condition of the cervix indicate that the abortion is still incomplete gentle curetting may be carried out. Even after this length of time the temperature will usually rise after the operation, and not infrequently there will be a rigor indicating blood invasion. In most cases, however, this will be only temporary.

C. H. DAVIS, M.D.

NEWBORN

Gruchakbank, J. N. The Hemorrhages of the Newborn. *Lancet* 923 cc 236.

From the findings at a maternity hospital the impression is gained that the presence of asphyxial congestion is the essential element in the production of hemorrhage, that the increase of this congestion by the pressure of the maternal passages is the next

most important element, and that injuries due to abnormalities of presentation or operative interference are third in etiological importance.

The incidence of hemorrhage in 300 mature and premature infants studied by Kennedy and the author is shown in Table I.

TABLE I.—THE INCIDENCE OF THE VARIOUS GRADES OF HEMORRHAGE IN 300 MATURE AND 300 PREMATURE INFANTS

Lesion	Mature Per cent	Premature Per cent
Hemorrhage—all grades	80	67.5
Capillary oozings or petechiae only	30	78.5
Gross hemorrhage	50	40
Gross intracranial hemorrhage	3	5
Gross intracranial hemorrhage and visceral hemorrhage		5
Vascular hemorrhage without intracranial hemorrhage	5	3
Intracranial hemorrhage alone		5
No hemorrhage	20	32.5
Testicular tears	30	

In comparing the incidence of hemorrhage in the group of mature cases with that in the group of premature cases the most striking difference is that while only 20 per cent of the mature infants were free from hemorrhage, practically 55 per cent of the premature infants escaped. The percentage incidence of most of the types of hemorrhage was lower in the premature group than in the mature group by fairly constant amount, but the incidence of meningeal hemorrhage was the same in both.

From these two series of cases it is evident that two main types of lesion can be distinguished. The most common—hemorrhage—occurs in about 70 per cent of all the cases, and is distinctly more common in the mature fetus (80 per cent) than in the premature (66.5 per cent). The other type of lesion, intracranial injury, occurs much less frequently being found in not more than 20 per cent of infants. Like the hemorrhages, this shows greater incidence in the mature than in the premature fetus.

From the finding of hemorrhages in infants which had died during the first few days of life from causes other than hemorrhage it is clear that

at least the lesser degrees of birth hemorrhage are not necessarily fatal. What effect, if any, they have on subsequent health and development is a question beyond the scope of the present study.

In the cases reviewed it was noted that a large proportion of the infants showing testicular tears are delivered by the breech. This fact tends to confirm the prevalent opinion that the after coming head is particularly prone to suffer lesions of the dural structure during its comparatively rapid delivery. The influence of operative measures—particularly of version—is shown by the number of premature infants with testicular tears whose delivery was so complicated.

TABLE II.—THE INCIDENCE OF STILLBIRTH IN RELATION TO THE VARIOUS GRADES OF HEMORRHAGE IN 300 MATURE AND 300 PREMATURE INFANTS

Lesion	Mature Per cent	Premature Per cent
Capillary oozing or petechiae	90	65
Intracranial hemorrhage alone	77	50
Intracranial and visceral hemorrhage	70	55
Visceral hemorrhage alone	50	75
No hemorrhage	54	43
Testicular tears	84	66

The incidence of stillbirth in the various groups of mature and premature infants shows a difference of 25 per cent in the rate in cases with capillary oozings and petechiae only. A similar variation—30 per cent—was noted in the rate in cases showing meningeal hemorrhage alone. The third, and perhaps the most striking, point was the 20 per cent excess of stillbirths among the premature infants with meningeal and visceral hemorrhages over the stillbirths in the corresponding group of mature infants.

From the examination of these figures it is evident that many infants with extensive birth hemorrhages are born alive and survive. A number of the cases investigated died from some quite independent condition such as bronchopneumonia and sepsis, and it is probable that but for the intervention of such disease the child could have survived beyond the period of infancy.

C. H. D. Wm, M.D.

GENITO URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Eschdrath D N. Double kidney 4 Surg 93
Irrva, 450, 53

The author defines the term double kidney as giving number of drawings of different reported cases of this anomaly, discusses its frequency and the morphology of the kidney and ureter takes up some of the clinical aspects of this condition and appends four tables showing the method of treatment and the results reached in the management of the thirty cases of this condition reported in the literature.

The more or less complete fusion of crossed ectopias is due to the displacement of one kidney during embryonic life rather than to reduplication of the embryonic ureteral bud with the formation of permanent kidneys around the cranial end of each of the two ureters arising from the same bud. The latter condition is better designated as a reduplication of the ureters and renal pelvis or as

double kidney. One half of a horseshoe kidney may be considerably higher than the other and one half may be much nearer the median line than the other but the two never lie entirely on one side as in crossed ectopia. Cases of reduplication of the pelvis in horseshoe kidney have been described but these should be regarded as a combination of horseshoe and double kidney. In double kidney there may be reduplication of the renal pelvis on one or both sides. As the reduplication of the ureters is subordinate to the reduplication of the renal pelvis the term double kidney implies the presence of double ureters. A case has been found by the author in which there were two ureters from a single renal pelvis.

The incidence of double kidney varies according to different authors from 2 per cent on the basis of 97 autopsies to 1 per cent as given by Weigert. It appears to Eschdrath however that from 3 to 4 per cent is conservative estimate. At the Mayo Clinic, during a period of fifteen years, reduplication of the ureters and kidney pelvis was found to be unilateral in 64 per cent of the cases and bilateral in 6 per cent. Of 3 cases reported by Papan 77 per cent were unilateral and 3 per cent bilateral. In 6 of 76 cases reported by Viera 70 per cent were unilateral and 30 per cent bilateral. In total of 60 reduplications of the ureter and renal pelvis the condition was found on one side in 80 per cent and on both sides in 20 per cent. Of the 50 cases (80 per cent) in which it was unilateral the reduplication was complete in 30 per cent and incomplete in 70 per cent. Of the 10 cases (20 per cent) in which it was found to be bilateral the reduplication was complete in 80 per cent and incomplete in 20 per cent.

There may be no sign of demarcation between the two halves of the kidney either externally or internally. In some cases, however the separation may be marked by a shallow groove externally and a more or less definite fibrous septum internally. In others, there may be a well marked groove or furrow externally and a corresponding well marked separation internally while in others there may be complete separation of the two halves both externally and internally.

As a rule the upper portion of the double kidney forms about one third and the lower portion the other two-thirds of the mass of the double kidney and the pelvis of the upper portion is smaller than that of the lower and never as perfectly developed. As is frequent in all anomalies of the kidney there is no true pelvis, the ureter arising directly as a result of the union of the primary calyces.

Double kidney may be associated with other anomalies. Several instances have been reported in which each half of a horseshoe kidney had two ureters and two renal pelvis. The double kidney usually lies at a little lower level than the normal. If one half of the kidney is hydronephrotic, the ureter from the other may be easily overlooked at operation. As a rule the ureter from the upper half of the double kidney crosses over toward but not beyond the midline and is inserted into the bladder both medial and caudal to the insertion of the ureter from the lower half.

The most common ectopic terminations of the ureters are (1) the neck of the bladder with the usual form of orifice (2) in the prostatic urethra, with the usual form of orifice (3) the ending of one ureter in a cystic dilatation on the surface with, in some cases, the presence of small ureteral orifice (4) the communication of both ureters in cystic dilatation (5) blind ending of one ureter above or below (6) the ending of one ureter in the seminal vesicle of the same side as that of the involved kidney (7) endings either blind or by open ureteral orifice in the female urethra, the vagina or the vestibule usually the last named, below or lateral to the external urinary meatus.

There is no essential difference between the various pathologic conditions found in a double kidney and those of a single kidney and there are no pathognomonic symptoms indicative of disease of one or both halves of double kidney.

Of eighty cases collected from the literature only 40 per cent were diagnosed prior to operation. In 60 per cent the diagnosis was made either at the time of operation or from examination of the specimen. Pyelography is of very great aid in the diagnosis. The diagnosis of surgical affections of the double kidney is dependent upon the following

reactions, such as too strong solutions and excessive pressure on injection, are listed. A series of forty seven pyelographic pictures are reproduced and legends containing the essential features of the case records are appended. These illustrate possible diagnostic errors due to incomplete examinations and faulty technique and present a number of unusual or atypical findings. The bibliography is extensive.

JONAS G. CHURCH, M.D.

BLADDER, URETHRA, AND PENIS

Sacchi G. Cystadenoma of the Bladder (Cistadenoma della vescica) *Arch Ital Sci* 93 3 6

Sacchi's case was that of a woman 50 years of age who entered the hospital on account of severe hematuria. Cystoscopic examination revealed a smooth, broad based mass the size of pigeon egg just beyond the left ureteral orifice. As electrocoagulation was impracticable, the bladder was opened by a suprapubic incision and the mass excised. The patient made a good recovery. Histologic examination showed that the growth was an adenoma undergoing cystic degeneration.

Vesical adenomata frequently undergo cystic degeneration because of occlusion of the glandular ducts by the accumulation of secretion which produces dilatation.

In the author's opinion the tumor in the case reported developed from some aberrant gland or an embryonic rest.

W. A. BURNETT

Kidd, F. The Treatment of Epithelial Tumors of the Urinary Bladder Based on Consideration of 162 Cases Personally Observed and Treated. *Lancet* 93 4, 5 3 58 636

Malignant papillomata and some papuliferous carcinomata do not break through the muscular coat of the bladder until fairly late. As the muscular coat forms a barrier the lesions tend to spread in the submucous coat. They also spread by local contact implantation thus taking place on the opposite wall of the bladder. After they break through the muscular coat of the bladder the majority which he just above the ureters are held back for some time by the overgrowth of dense fibroblastic tissue in the connective tissues surrounding the base and sides of the bladder and considerable overgrowth of the mass in this tissue. Less often these tumors lie on the trigone and break into the rectum. When they rise high up on the superior or lateral walls of the bladder they may rupture into the peritoneum or metastasize to the peritoneum or liver. The usual metastasis, however, is from the pelvic cellular tissue to the sides and the posterior wall of the pelvis to the group of glands that be the bifurcation of the aorta. From here metastasis may occur to the lumbar chain on either side but this appears to be late event except in cases of rapid growing exciting carcinomata of the bladder.

Non metastasizing is unusual. In cases of the common malignant papillomatous type of bladder

tumor in the region of one ureter the lymphatic spread of the cancer cells is slow. The common cause of death is not so much the invasion of distant parts as the local accidents of position, such as dilatation of the ureters and uremia, infection cystitis and pyelitis, exhaustion from loss of blood, and spread of the condition to the rectum and peritoneum. Hence if treatment is sought early enough, it may be possible to remove all the local growth and effect cure. Of the 162 series of cases less than a third were seen at a stage when radical treatment was possible. In cases of painless hematuria the only effective course is an immediate cystoscopic examination.

The old method of opening the bladder on its tensor wall and snipping away the growth is not radical enough. The bladder should be shelled out before it is opened and its blood supply controlled so that the entire tumor area can be removed from the outside in one piece, the excision being made wide of the growth. Nicolich of Trieste reported experimental work on dogs in which he found that the bladder will quickly re-form if all except the trigone is removed.

Of eighty of the author's patients who were seen early enough for diathermy or partial cystectomy forty-one are known to be alive and well from seven to eleven years after the treatment.

Kidd classifies his cases into two groups and comments on them as follows:

Group 1: simple primary or small recurrent papillomata. This group included twenty-eight cases.

Diathermy was applied through the operating cystoscope. The risk and inconvenience involved in removing portions of bladder tumors through the cystoscope for macroscopic study seem to outweigh any advantage in the procedure. The degree of malignancy must be judged from the clinical findings if the best results are to be obtained. Some tumors which prove malignant react to once diathermy while others which appear benign prove refractory, eventually requiring open operation and proving to be malignant. The age of the patient is of relatively slight importance. The age of the patients whose cases are reviewed averaged 43 years, and the average number of treatments was less than three. All tumors appeared to be completely destroyed within few months. Of twenty-one cases followed up to

93 nineteen were without recurrence from four to nine years after the treatment. Diathermy seems less apt to be followed by recurrence than other treatment as the tumor is cooked in situ without handling. In these cases however recurrence developed six years and ten years respectively after the operation. These patients were then subjected to open operation and in 9 were alive and well. There were no death in cases treated with diathermy. In one of two in which there was a rather severe hemorrhage the clot was removed from the bladder with a lithotrite and Bigelow's evacuator and in the other by cystotomy. One case of cystitis as observed Hexamethylenamine was used

throughout the treatment. The first treatment was given under general anesthesia in order that the entire top of the tumor might be destroyed at one sitting. The debris was then washed away, the bladder refilled, and strong treatment given the pedicle. When this method is used, fewer treatments are required and the cure is quicker. An interval of from three to four weeks is allowed between treatments.

Group 3. Inflammatory papilloma. In certain cases with chronic cystitis and pyelitis due to the colon bacillus isolated, sessile buttons of hyperplastic inflammatory tissue covered the hyperplastic epithelium and closely simulating epithelial tumors are found around the ureters and on the trigone. This corrugated epithelial tissue is not so crumbly or so friable as that of a papilloma. In the two cases of the series belonging to Group 3 these buttons were treated by diathermy in conjunction with the usual local treatment for the bacterial infection. Complete disappearance of the disease resulted.

Group 3. Small giant papilloma or early carcinoma. In this group there are twenty-six cases. It is often very difficult to decide upon the best method of treatment. The patient may be of advanced age and without a history of previous hematuria and yet present a single large somewhat bulb papilloma with a broad and somewhat sessile base with very large cilia running into it. Often diathermy will remove most of such tumor but sometimes it will fail. Of the twenty-six cases reviewed, twenty proved resistant to diathermy. Four patients were then subjected to partial cystectomy. Of these, two are alive after seven years and one remained well for three years and then died of recurrence. One died after partial cystectomy. Three were operated on by other surgeons and died from recurrence. Five others refused treatment and died within two years. Fourteen of the tumors are completely destroyed by the treatment. Nine patients have remained cured from six to seven years after the operation.

Group 4. Partial or subtotal cystectomy. This group contained twenty-eight cases. B. partial or subtotal cystectomy is meant an operation in which the bladder is freed from its bed before it is opened, the growth is removed from without with a large portion of the surrounding bladder wall which usually includes one ureter and then the ureter is cut, it is implanted into the reconstructed bladder.

Of the twenty-eight patients subjected to this operation twenty-two were discharged healed within a period of from three weeks to three months. Secondary complications were rare. Eleven are known to be living and all are free from trouble more than one year after the operation. Eleven of the twenty-eight cases are known to have been cured and it is probable that fifteen are cured in all. Six of the patients died within a month of the operation, one of pneumonia, two of heart failure, one of pyelitis and uremia, one of intra-

peritoneal operation, and one of shock due to rupture of the bladder stitches while drawing as using too much force in stitching the bladder.

The operation as performed extraperitoneally because it is done more easily in this manner and with less risk. Spinal anesthesia was supplemented with ether anesthesia. An incision was made from the symphysis down to the rectum and the affected portion of the bladder then removed by clean cut half incision. If one ureter was involved in the growth, as was usually the case it was cut off beyond the growth and reimplanted in the reconstructed bladder. One rubber drain was carried up from the ischioanal fossa to the site of the reimplanted ureter and a Pezzer drainage tube inserted into the upper anterior portion of the bladder. Irrigation of the bladder subsequent to the operation was done but hexamethylamine and boric acid were given by mouth. Perineal drainage was usually maintained for a week, and suprapubic drainage for about ten days.

Group 5. Cystectomy with local removal from within the bladder. This group included seventeen cases of papilloma (simple and malignant single and multiple) which were treated by the old operation in which the anterior wall of the bladder was opened and the papillomata were dealt with entirely within the bladder by clamping their pedicles and stitching up the cuts, with or without diathermy and the application of strong silver nitrate to the mucous membrane. Five of the cases are known to be cured and possibly cure was effected in two or four others.

Group 6. Total cystectomy. In this group there are five cases. Total cystectomy seems to be indicated when an early papilliferous or ulcerating carcinoma is seen growing from the base or trigone of the bladder and involves the mouths of both ureters. Two in cases of multiple malignant polyps which recur in large numbers gain and gain and tend to fill the bladder. The cases reviewed were all of the first type. As rule dilatation of the ureters favors ascending infection of the lymphatics of their walls with consequent pyelitis and uremia. None of the patients lived for more than three weeks. Two died of shock, two of ascending pyelitis and uremia within a week, and one of intractable diarrhea after three weeks. In three cases the ureters were stitched into the rectum. In four a stapes showed that all traces of the carcinoma had been removed. In the fifth the tumor had spread to the peritoneum.

Group 7. Ureterectomy. Of six patients subjected to division of the ureters, five died of ascending pyelitis within three weeks. In four the ureters were anastomosed into the rectum and in one were brought out on the skin of the loins. The ureters are dilated in every case. The operation relieved the strangury and uremia. In the case in which successful result was obtained the ureter was reimplanted into the rectum. Four months after the operation the patient was comfortable and able to retain his urine for four hours without difficulty. He died five months later in com-

Group 3 permanent id 1 age There were eighteen cases of permanent cystostomy. In cases of severe stricture or constant clot retention this operation will give great relief and prolong life from six months to a year or even longer. One case in this group as that of a boy 3 years of age who had complete retention due to an epithelial carcinoma which was undergoing cystic degeneration and filled the bladder. In such cases cystostomy has lower mortality than ureterostomy and affords the opportunity of applying open diathermy or radium treatment.

Group 4 treatment of advised or refused This group included twenty four cases. In most of them the condition was inoperable but the patient was comparatively comfortable.

Group 5 radium treatment In this group there were five cases. In the very high dose of radium was left in situ for thirty six hours. This stopped the hemorrhage permanently but both patients died within four months. Radium was used also in two cases of carcinoma of the trigone between the ureters and in a third with multiple recurrent papillomatosis filling the bladder after previous operations by other surgeons. In one case the surface of the ulcer became healed, bleeding ceased, and the cystitis was cured but traces of the growth remained underneath. One other patient still has hematuria but her pain is less. Radium treatment should be reserved for cases of early malignancy between the ureters and cases of multiple recurrent papillomata which fill the bladder.

Group 11 incorrect diagnosis A incorrect diagnosis was made in two cases. In one in which stone in the prolapsed ureter simulated a large papilloma or sessile enlargement of prostatic body exploration was done with removal of the stone. In the other the condition was diagnosed as large sessile carcinoma of the base of the bladder between the ureters but nothing was done and the patient died perfectly well four years later. Bladder lesions which may be confused with tumor are acute inflammatory oedema of the mouth of tuberculous ureter, similar oedema caused by the colon bacillus, stone impacted in the lower end of a ureter and inflammatory papilloma.

Group 12 true pedicled papilloma of the male urethra In this group there was one case. The patient had been treated for ten years for gonorrhea although the discharge was blood rather than pus. On urethroscopic examination six long pedicled papillomata were found hanging from the roof of the urethra from 3 to 4 in from the meatus. Diathermy was used after the penile urethra had been slit down to its floor. On section, the tumors exactly resembled simple papillomata of the bladder. The urethra healed by primary intention.

On the basis of this series of cases the author draws the following conclusions:

1. Cases of papilloma of the bladder of benign type diathermy applied through the cystoscope will effect a cure in at least 90 per cent of the cases

and is without the risk of opening the bladder. To open the bladder and snip out such tumors should therefore be considered unnecessary interference associated with definite risk to life.

2. Diathermy applied through the cystoscope will give a cure also in certain number of cases of doubtful malignancy. If it fails to exert an adequate destructive action after three treatments the most a total cystectomy should be done.

3. In the treatment of malignant papilloma, early papilliferous carcinoma, and even very early ulcerating carcinoma of the bladder subtotal or partial cystectomy should render the old intracanal operation obsolete except in a few isolated cases. It is an operation of considerable technical difficulty and presents a definite risk to life but when successful gives a higher percentage of permanent cures than the older type of operation. All cases of partial cystectomy should be followed up at regular intervals by cystoscopic examination.

4. Total cystectomy has been rendered almost obsolete by partial cystectomy diathermy and radium treatment. It should be reserved for cases of multiple malignant papillomata which resist other treatment, and for a few favorable cases of early carcinoma involving both ureteral openings.

5. Ureterostomy presents almost as great a risk to life as total cystectomy. When successful, it gives great relief and in a few favorable cases it may be used as a preliminary to total cystectomy.

6. Radium cannot yet be substituted for surgery though it has perhaps replaced total cystectomy.

7. The tumors considered in this article should be classified from a clinical standpoint as simple and malignant pedunculated tumors and papilliferous and ulcerous sessile tumors. C. D. HOWARD, M.D.

Neill, W. J. The Treatment of Carcinoma of the Bladder. *South M J* 9 3 214, 20.

The author discusses the etiology of carcinoma of the bladder gives history of its early rational treatment, outlines his method of treatment, and reports the results obtained in a series of 4 cases treated at the Howard A. Kelly Hospital, Baltimore from 1909 to 1910.

Bladder tumor is the most common cause of blood in the urine. It may occur at any period of life but is most frequent after middle age. Its course is prolonged. Usually it tends to remain limited to the bladder but in some cases metastases to the pelvic bones occur early.

Warner in 1747 operated for bladder tumor through lateral perineal incision. In 1875 Simon removed growths from the female bladder through his urethral specula, and in 1854 Billroth first operated successfully upon bladder tumor from above. Later the suprapubic route for operation was made popular by Guyon. Operation through the vagina was done thirty years ago. In 1905 Watson described the complete removal of the bladder in all cases of cancer in which the disease was limited to the bladder itself.

The etiology of this condition is uncertain, like that of new growths elsewhere. Some writers contend that in a large percentage of cases there is a history of chronic cystitis or other irritation but the author has observed this in a comparatively small number.

The results of all incisional forms of treating carcinoma of the bladder have been discouraging and those obtained by the radical removal of the tumors and by cystectomy with transplantation of the ureters have not been brilliant. Before any form of treatment is instituted a test of the kidney function should be made as the cause of death is usually uremia with infection of the entire urinary tract rather than the disease itself. Cystoscopy should be done for the same reason. The author recommends the use of the open air cystoscopic technique of Kelly. Because of failure to make cystoscopic examination in all cases of hematuria an easily removable papilloma may be allowed to pass over into condition of hopeless malignancy.

All bladder growths are potentially malignant. Pedunculated tumors with no indication of the mucosa respond well to fulguration, but all other types seem to be made worse by this treatment. A review of the literature shows the general consensus of opinion as to treatment to be as follows:

For all superficial or pedunculated benign papillomata direct intravascular fulguration or removal by means of the cautery gives by far the best results.

For infiltrating, definitely malignant tumors, the only treatment followed by satisfactory results is radical removal of the area of the bladder wall involved.

When the growth involves both ureters, Wilson's operation of total cystectomy with primary operation for transplantation of the ureters gives the best results.

Cystotomy, excision of the growth, and treatment of the base with the actual cautery should be used only in hopeless cases as palliative measure to relieve pain and hemorrhage.

Since 1911 radium has occupied a prominent place in the armamentarium of many large clinics. Of the 149 persons with carcinoma of the bladder who were treated at the Howard A. Kelly Hospital from October, 1910, to May 19, fifty-five were males and eighty-four were females. The youngest was 36 years old and the oldest 76 years. In fifty-one cases there was no other symptom than blood in the urine; the longest duration of this symptom was six years and the shortest ten months. In every case hematuria was a prominent symptom and made its appearance early. Seventeen patients gave a history of chronic cystitis persisting from ten to twenty years. In eighty-nine cases palliation was obtained for a short time only or there was no improvement of the condition. In fifty-three cases there was definite improvement in relief of symptoms for long time or cure over a period of three years with no recurrences.

The author has employed three different types of radium treatment, used either alone or in combination: (1) direct, intravascular, or surface radiation; (2) implantation, or the insertion into the growth of tiny glass capillary points containing radium emanations; and (3) mass radiation at a distance from the exterior by way of sacral, perineal, suprapubic, and vaginal portals. Intravascular treatment is carried out on all growths confined to and around the neck of the bladder—papillomata, papillary carcinoma, and infiltrating carcinomata. Patients with growths other than these and without evident metastases are subjected to suprapubic section. The intravascular treatment is given through the Kelly open-air cystoscope, the radium being encased in brass capsule attached to the end of straight sound and held against the tumor under direct vision. The maximum dose for each square centimeter of disease is 50 mgm hrs of radiation. This is not repeated under a period of six weeks. If the tumor is definitely infiltrating sessile carcinoma, it may then be treated by implanting into it small glass emanation points.

The suprapubic or incisional type of treatment is carried out in cases without evident metastases, cases of extensive infiltration of the bladder wall, large and multiple tumors, and cases in which there is some doubt as to the exact extent of the bladder involvement. If the tumor is large and definitely protruding, it is removed with the cautery and its base is cauterized to check bleeding. All of the areas of the tumor are implanted, the average total dose for each cubic centimeter of the growth being 0.5 mc. Suprapubic intravascular surface radiation is accomplished by means of multiple radium capsules screened with 1 mm of brass and 1 mm of rubber. The tubes are placed side by side and the number used depends on the size of the tumor. Care is taken to overlap the edges of the neoplasm by 1 cm.

C. D. HOWARD, M.D.

Crosbie, P. D. Complications Occurring in Gonorrheal Urethritis. *Review of 575 Cases*. J. Urol., 1914, 435.

The complications of a simple gonorrhea of the anterior urethra are few and of slight importance while those of infection of the posterior urethra are widespread and very serious. The gonococci tend to progress along the canal, infecting the glands of the mucosa along the way and in a large number of cases reaching the deeper glandular structures, the prostate and vesicles. It is only by the greatest care that this posterior involvement can be prevented but the author believes the common incidence of 50 per cent is too high, 30 per cent being more nearly correct. When once the prostate and seminal vesicles become involved, a number of grave complications may be produced by way of the blood stream or by direct extension of the condition to the bladder and kidneys or through the lymphatics. The frequency with which ureteral structures are found on passage of the catheter suggests that in-

involvement of the ureters and kidneys is more common than is generally believed.

The common complications of ordema of the glans and the foreskin and a bloody discharge are usually cleared up easily by stopping treatment and having the patient soak the penis in hot water several times a day. Abscess of the glands of the fossa navicularis usually ruptures into the urethra itself if it does not or points externally. Artificial drainage should be established from within the urethra in order to prevent the development of a urethral fistula.

In the prostate the immediate trouble is usually not very severe. There is usually only increased frequency with tenesmus, but in a few cases the symptoms are very marked, with fever and prostration. In a few cases an abscess appears which may demand surgical interference, but as a rule this ruptures into the urethra or the rectum. Abscesses may be drained through either the penileum or the rectum. The treatment of gonorrheal inflammations of the prostate and vesicles depends on the severity of the symptoms. Until the acute stage is passed no urinations should be given light massage of the prostate and vesicles, provided they are not too sensitive, and the forcing of fluid usually suffices. The patient should be kept as quiet as possible and on a light diet. The severe cases should be treated in hospital with rest in bed, copious hot rectal irrigations, cathartics, and light massage every other day if the patient can stand it. If there is retention catheterization should be done as often as comfort demands. Hot sitz baths are beneficial. As soon as the patient can stand it, antero- and posterior injections of hot 5,000 potassium permanganate solution should be given every other day and followed by light massage.

The next complication to be considered is involvement of the epididymis through extension of the infection along the vas. This may occur in the acute stage of the gonorrhea or at any time later after the gonococci have died out and may be caused by other bacteria following in their wake. It is usually precipitated by excesses of one sort or another. As a rule it will subside with rest and the application of ice packs to the scrotum, but as it tends to recur the epididymis should be drained. The testicle is much more apt to functionate if the epididymis is drained than if the abscesses are left to resolve with the formation of cicatricial tissue.

In acute posterior urethritis there is a certain degree of trigonitis but no permanent damage to the bladder.

The treatment of stricture of the ureter is the passage of bougies through the cystoscope for dilatation. Pyelonephritis of gonorrheal origin occurs probably more often than is generally believed and tends to become cured spontaneously provided there is no obstruction to the outflow of urine and there has been no previous kidney disease.

Urethral strictures usually follow severe types of infection but may occur in very mild cases as well. If a filiform bougie can be passed it is very much

better to dilate gradually than to do an external urethrotomy as there will be less scar formation. If there is a peri-urethritis or pericystitis, incision and free drainage are indicated.

Of the blood borne complications the most serious as well as the most rare is gonorrheal endocarditis which is usually fatal. Thayer reports its incidence as 3 per cent.

Gonorrheal arthritis may be caused by the gonococcus itself in the joint or by the toxins produced by the organism. It tends to be monarticular and has a predilection for large joints such as the knee, elbow, ankle, and wrist. The treatment is the same as that of arthritis due to any other cause. The author does not approve of the use of vaccines.

In chronic posterior urethritis there is infiltration of the submucosa with round cells which changes the elastic tube into a tube that is narrowed and resistant to dilatation. The treatment indicated is a continued course of gradual dilatations each followed by the application of a 4,000 solution of silver nitrate and massage of the prostate and vesicles.

C. D. Hodges, M. D.

GENITAL ORGANS

Lasser, H. The Absence of the Prostate Associated with Endocrine Diseases, Notably Hypopituitarism with the Histories of Eighteen Cases. *Endocrinology* 1923, vol. 2, 5.

The author discusses the status of the prostate as a gland of internal secretion, the influence of the testicle on the prostate, the influence of the pineal and suprarenal glands upon the prostate, the influence of the pituitary upon the genitalia and the secondary sex characters, and the prostate in clinical hypopituitarism.

He reports in detail eight cases of pre-adolescent hypopituitarism of the Levi-Lorain type of infantilism. In six, the prostate was absent and in two, very small. He reports also five cases of pre-adolescent hypopituitarism of the Froelich type. In four the prostate was absent and in one small. Other cases reported are two of dyspituitarism, giga-tism and infantilism, Neurath-Cushing type, and three cases of eunuchoidism.

The points brought out in the discussion are as follows.

1. The prostate does not develop if castration is performed early in life.

2. Though normally developed, the prostate will atrophy and eventually disappear if castration is performed in the adult.

3. Castration has no effect on the hypertrophied prostate.

4. In hypogonadism or eunuchoidism the prostate atrophies.

5. Goetach showed that feeding the anterior lobe of the pituitary to young rats hastens the development of the prostate.

6. Many investigations have shown that experimental hypopituitarism is followed by sex in-

fantism, including retarded development of the prostate

† I clinical hypoparathyroidism in the male the prostate fails to develop if the disease begins before puberty and atrophies if it has its onset after puberty

OUBERT J THOMAS, M D

Duettmann, G. Renal Insufficiency in Prostatic Hypertrophy (Die Niereninsuffizienz bei Prostata hypertrophie) *Beitr. N. Chir.* 9, 3, 1930, 79

Duettmann examined eleven cases of prostatic hypertrophy with regard to kidney function determining the quantity of urine excreted the concentration power of the kidney and the retention of nitrogen in the blood

In four cases there were signs of kidney insufficiency. These are divided into two groups: (1) functional disturbances, and (2) organic renal insufficiency. Functional disturbances are characterized chiefly by poor renal concentration power. This leads to retention of salt with polyuria and polydipsia while the excretion of nitrogen is relatively good. It is due to pressure injury of the tubular epithelium. In such cases two stage operation is indicated because, as rapid restoration of the kidney follows the formation of a bladder fistula the prostatectomy can be performed later without danger. In organic insufficiency in which there is also retention of nitrogen in the blood, only the formation of a bladder fistula should be done. Korsch (2)

Papin and Verlaac. The Treatment of Carcinoma of the Prostate with Radium (Sur le traitement du cancer de la prostate par les applications de radium) *J. d'anal. med. et chir.* 19, 3, 1931, 5

Papin reports eleven cases he treated with radium. In only one case was a large tube of radium implanted in the prostatic bed after prostatectomy. This patient died. In the other cases radium needles were used. After trying different methods Papin has adopted the following technique:

A suprapubic opening is made and the bladder by palpation regions are palpated for enlarged glands. If these are found, only cystostomy is done. After closure of the peritoeum, the bladder is opened and the peri-cervical region is palpated to determine how far the neoplasm has developed laterally. The usual cystostomy follows. If the case is considered one in which the application of radium will be beneficial, second operation is done ten days later. Through perineal incision the needles are placed so that they all irradiate the cancerous mass in the prostatic vesicles. A finger is inserted in the bladder opening to serve as a guide.

In 11 cases death resulted early from rapid necrosis of tissue. In three, there has been such marked improvement that a permanent cure is possible. In each of these cases the prostate has shrunk to normal size.

Papin believes that the cases favorable for the application of radium are also those in which surgical

treatment is applicable, but that a successful result may be obtained with radium in cases in which the operative risk is high. He is not sure, however, that the improvement so far noted is not merely an arrest of the carcinomatous process by the sclerosis following the use of radium.

Verlaac reports the findings at autopsy in four cases of prostatic or vesico prostatic cancer three in the early stages and one in the late stages. In three of the cases death occurred twelve, twenty and twenty three days after operation respectively. The operation consisted in inserting radium tubes into the prostate through the perineum and leaving it in place for forty eight hours. In one case, in which diarrhoea occurred, congestion of the mucosa of the large intestine without ulceration was found at autopsy. In the others, in which there are symptoms suggesting peritonitis, marked distention of the large bowel without peritonitis or mechanical obstruction was found. In Verlaac's opinion radium used for the treatment of carcinoma of the prostate may have a dynamic or irritative action on the large intestine, particularly the rectum.

Verlaac's fourth case was that of a man 60 years of age. Ten tubes of radium sulphate, 6 cg. each, were inserted into the right lobe of the prostate for forty eight hours. Death resulted thirteen months later. At autopsy the right lobe of the prostate was found to contain an area of necrosis surrounded by fibrous thickening which probably represented the destroyed carcinoma. Outside the fibrous zone the prostatic tissue showed fully active and recent cancerous areas.

KELLGREN BERGM, M D

Winkelstein, V. The Development of Non-Gonorrheal Epididymitis (Zur Entstehung der Epididymitis non gonorrhoea) *Zentralbl. f. Chir.* 9, 3, 1930

The author reports the development of bilateral suppurative inflammation of the epididymis in a case in which perineal fistula formed as the result of very obstinate stricture of the urethra. Following ligation of both vasa deferentia to prevent an ascending infection fistula formed at the sites of the ligation and drained urine in thin stream when the patient strained. This forcing of the urine through the vasa deferentia is undoubtedly the cause of the suppurative epididymitis. Therefore whenever epididymitis develops in case of disease of the urinary tract in which stricture is necessary to empty the bladder (prostatic hypertrophy stricture) the possibility of urinary infiltration as the cause should be borne in mind. VOLLMER (2)

Lipshutz, A. New Experimental Data on the Question of the Seat of the Endocrine Function of the Testicle. *Endocrinology* 9, 2, 1931

Tandler and Gross, Steinach, Sand and Lipshutz have supported the theory of Boon and Ancel that the endocrine function of the testicle in mammals is mediated by the interstitial cells. Without adding new data, Kohn, Benda and Starke have attacked this theory claiming that only the germ

ive part of the testicle has an endocrine function. Lupaetz report the following experiments in support of the work of Houn and Ancel.

To determine whether normal internal secretion of the testicle is possible without full development of the interstitial cells, one testicle and half of the other were removed from a month old rabbit. At the end of eight months the penis was infantile. The eunuchoidism was probably due to the under development of the fragment. Microscopic examination showed spermatogonia surrounded by cells of Sertoli. The interstitial tissue was chiefly connective tissue. The interstitial cells were apparently infantile.

That incomplete spermatogenesis is not the cause of the eunuchoidism is demonstrated by the following observations.

Unilateral castration was done on three rabbits 4 weeks old. In one the penis remained infantile at the age of 18 and 21 months and the testicle as large as the size of those of the control. The epididymis was full of spermatozoa and the tubules were in full spermatogenesis. The interstitial cells were underdeveloped.

To determine whether spermatozoa are necessary for the internal secretion, the left testicle of two-months-old rabbit was incised, the incision including the ductus epididymidis on the right side. The animal remained eunuchoid until the seventh month. In the eighth month the penis had assumed the size of the control. Examination of the left testicle showed that the tubules were enlarged and had evidently entered into spermatogenesis. Many layers of cells had disquamated. The interstitial cells were well developed and several mitoses were found. The findings of the right testicle were similar. Spermatozoa were not developed.

To determine whether full hormonal activity of the testes is possible, the testes of all stages of spermatogenesis, the left testicle and all but a small part of the upper pole of the right testicle of a ten-day-old guinea pig were removed. At the end of four months, the animal which was fully developed

was killed. The seminal vesicles were found normal. All of the tubules were degenerated, the only one layer of cells, probably cells of Sertoli. Apparently there was some spermatogenesis. This observation seems to prove that full hormonal activity is possible in the absence of all of the stages of spermatogenesis.

It is possible that after the seminal tubules had remained in an undeveloped stage for a certain time signs of castration would have appeared, but in an animal treated in the same way no somatic signs of castration were observed in a period of eleven months. There is no proof of temporary regeneration of generative tissue to explain the maintenance of sex characteristics.

Another possibility is that the testicle may be able to perform its normal hormonal function without the different stages of spermatogenesis but that spermatogenesis is necessary for the development of the interstitial cells. In one experiment there

were infantile tubules and infantile interstitial cells with eunuchoidism, while in another the tubules had regressed to an infantile stage but there were adult interstitial cells and sexual maturity. However, it is possible that beginning spermatogenesis, if not a complete cycle, is necessary for the development of active interstitial cells.

To determine whether the testicular hormonal activity may be absent when the interstitial cells are present in large numbers as claimed by Bell, Benda, Durck, Belbinger and Steine incisions were made through the testes and ductus epididymidis on both sides of an animal two months old. The animal remained eunuchoid for six months. Spermatogenesis ceased. The interstitial cells were numerous and extraordinarily large. The protoplasm was packed full of fat droplets. The nuclei were apparently normal. The questions as to whether the interstitial cells were truly normal and whether the eunuchoidism was due to their abnormality or the cessation of spermatogenesis require more experimental work for answer.

Stieve claims that following unilateral castration the hypertrophy of the remaining testicle is proof of the endocrine function of the generative part. A large number of experiments have demonstrated that there is no hypertrophy when all but a small fragment of testicle is removed. This small fragment can compensate for two normal testicles. Evidently some other factor causes the increase in weight of the remaining testicle following unilateral castration. The cause of hypertrophy of the interstitial cells seems to be some local factor.

Bresca demonstrated by means of castration that the important feature of the male triton is under the control of the testicle. This was confirmed by Aron. Stieve insisted that so long as no interstitial cells are found in the triton the hormonal function of the testes in mammals cannot be performed by interstitial cells. Aron localized a special structure above the hilus of the testicle which he destroyed with the galvanocautery at the time of heat. This had the same effect as castration. Examination showed that the generative part of the testis was not disturbed. Following a detailed study of this structure Champy stated that these cells arise from the cells of Sertoli.

Normal endocrine function of the testicle is not possible without interference by other glands with an internal secretion. Bell has called attention to the relationship between the sexual and the other endocrine glands. From the experiments of Stenach and of Saded on heterosexual transplantation of the ovary and testicle it seems probable that the influence of the other endocrine glands on sex characters goes through the sexual gland as medium.

In conclusion the author emphasizes that the various experiments performed have proved that the normal hormonal activity of the testicle of mammals is impossible in the absence of fully developed interstitial cells. A testicle with spermatozoa with undeveloped interstitial cells cannot

perform its normal endocrine function. Normal endocrine function is possible when only the cells of Sertoli and spermatogonia are present in the tubules. The sex characters can be normally developed when only a 1 per cent fragment of testicle is present. Possibly the interstitial cells receive some impulse from the developing gonads or cells in intra uterine life.

C. D. PICKELL, M.D.

MISCELLANEOUS

Dillon, J. R. Pre-Cancerous and Early Cancerous Lesions of the Genito-Urinary Tract. *California State J. M.* 9:3 221 1945

Before the cancer problem can be solved the laity must be educated to appreciate the significance of the earliest symptoms and the importance of early diagnosis in order that the complete removal of the growth will be possible.

In the case of men past 50 years of age who complain of dysuria or pain in the perineum or rectum malignancy should be suspected if on rectal palpation a firm nodule is found in either lobe of the prostate or one or both lobes are thickened and infiltrated around the seminal vesicles.

Hematuria without apparent cause coming with a sudden onset and often ceasing abruptly is an indication for an immediate investigation, preferably during the stage of gross bleeding when it can be determined whether the blood comes from the bladder or kidneys.

Malignancy is suggested by thickening or necrosis of the papilla, edema at the base of the tumor nodules in the mucosa near the tumor or induration felt on rectal or vaginal palpation.

Malignancy of the kidneys and ureters causes no early symptoms and even death may result without any clinical evidence of renal involvement. So long as surgery remains the only method which offers a chance of cure the results of treatment will depend more upon an accurate diagnosis before metastasis has taken place than upon any particular radical technique.

Dillon concludes his article as follows:

1. The diagnosis of beginning malignancy depends upon the patient's early appearance, the recognition by the physician in general practice of clinical findings indicating urological examination other than those definitely arising in the genito-urinary tract.

2. (1) a history of hematuria or pyuria, though the urinalysis at the time is negative; (2) pain or blood in the urine though there are no clinical symptoms suggesting involvement of the urinary tract; (3) a tumor in the upper lateral part of the abdomen or the suprapubic area; (4) X-ray shadow suggesting the location of a lesion in the urinary tract; and (5) a history of intermittent abdominal pain.

3. It must be expected that a large number of the diagnostic tests will be negative but negative urological data are often fully as valuable as positive data.

4. The long duration of symptoms before the patient is completely examined is the greatest stumbling block to an early diagnosis of beginning malignancy. Knowledge of the importance of analyzing early signs and symptoms must be spread not only among the laity but also among general practitioners. If the results of treatment are to be improved.

LEON GREEN, M.D.

SURGERY OF THE BONES JOINTS, MUSCLES TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Edington, G. H. *Spongy Exostosis of the Long Bones*. *Gazette of India* 1913, xv, 73.

Spongy exostoses usually arise at or near on extremity of the diaphysis in close proximity to the epiphyses. Sometimes, however, they occur at distance from the bone extremity. They are more common in the femur and tibia than other long bones and where bony growth is most extensive and prolonged.

Exostoses are composed partly of cartilage. They are usually named chondro osteomata, ossifying chondromata and cartilaginous exostoses. Usually the cartilage forms a cap over the cancellous bony core. It may be lobulated and form distinct processes. It is thickest over the free extremity of the outgrowth. There is little tendency to recurrence where the bony core is in continuity with the cancellous tissue of the diaphysis.

Burns present over the cartilaginous cap may become inflamed and suppurate.

Exostoses may be of the spongy form, almost sessile with slightly constricted, short broad neck, or pedunculated. They tend to assume an oblique position. The pedunculated exostoses may break off.

Interference with normal bone growth occurred in only one of the series of cases reported by the author. This was a case of exostosis of the lower end of the radius with stunting of the radius and curvature of the ulna. In cases of multiple exostoses such interference with normal growth is not infrequent.

Exostoses seem to arise from a sequestered portion of the epiphyseal cartilaginous plate. Ossification and continuation of growth correspond closely with that of the parent bone. Clutton states that exostoses sometimes begin after general bone growth has ceased.

In some cases rickets may be present but the author believes this is a complication.

Deformity may be the first sign of an exostosis. It may be due to swelling or secondary curvature of the bones. In some cases injury may first call attention to the exostosis. Suppurative burnings may be a prominent feature. The growth may be discovered accidentally.

In cases of simple exostosis the treatment consists in removal of the growth. In cases of multiple exostoses the removal of those that cause pain or discomfort should be undertaken.

The ten cases reported by the author were as follows: an osteochondroma of the sternal end of the clavicle; an exostosis of the lower end of the radius;

spongy exostosis of the first metacarpal bone, a nodulated exostosis of the posterior end of the iliac crest, an exostosis of the outer side of the lower third of the femur with fracture of the pedicle, an outgrowth from the region of the adductor tubercle, a spongy exostosis of the upper end of the tibia within the capsule, spongy exostosis of the upper end of the tibia due to injury, a spongy exostosis of the lower end of the tibia with deformity and multiple exostoses.

JOHN MITCHELL, M.D.

Koskowsky, A. A. *The Morphology of the Blood in Pneumococcus Infections of Bones and Joints* (Die Morphologie des Blutes bei Pneumokokkeninfektion der Knochen und Gelenke). *Verhandl. d. Russ. Chir. Putsch-Ges.* Petrograd, 9.

For years the author had made systematic blood examinations in cases of surgical disease because the variations of leucocytes and neutrophils constitute an important criterion of the reaction of the body to pyogenic infection. By comparing the clinical picture with the blood count—the increase in the leucocytes indicating the organic resistance, and the percentage of polymorphs indicating the intoxication of the blood—he classifies cases into the following three groups:

Pyemic leucocytosis of varying degree: neutrophils less than 85 per cent.

Septic leucopenia: neutrophils more than 85 per cent.

3. Septic pyemic high leucocytosis: neutrophils more than 85 per cent.

The osteoarthritic pneumococcus infections are more frequent than is generally supposed. From a careful study of seven acute and thirteen chronic cases in an orthopedic clinic the author came to the conclusion that after the subsidence of the initial symptoms as well as after subsequent fistula formation, the condition is often confused with tuberculosis. When the foci are closed, puncture often reveals no pus, the exudate is scant and rich in fibrin and, as it is difficult to aspirate, the bacteriological examination is often not made. Bacteriological examination will always show characteristic gram positive diplococci. However, cultures frequently fail even when special media are used, as in chronic cases the bacteria are usually intracellular or are co-laminated with saprophytic cocci.

The following X-ray findings speak against tuberculosis: narrow sharp erosions in the epiphyses, marked periosteal coat around the diaphyses, and generalized areas of slight destruction. In acute cases in which these diagnostic signs are still absent the blood examination is of particular value in the differential diagnosis and prognosis. The blood picture is that of pyemia and indicates tendency

on the part of the osteoarthritic pneumococcus infection (form metastases). The lymphocytosis characteristic of tuberculosis is absent. The virulence is usually not high, the leucocytosis is moderate, the increase in polymorphs is slight, and the neutrophilia distinct. In severe cases the blood curves diverge, the leucocytosis remains low and the neutrophilia rises, the blood picture becoming septic. This is true also in cases not properly treated.

The treatment should be expectant. Operation should be delayed if possible for two weeks after the beginning of the disease and should consist of puncture or stab incision followed by the injection of iodine iodoform glycerine. The effect of the emulsion is to certain extent specific.

V. DER OUYER SACKEN (Z)

Bloodgood, J. C.: Bone Tumors. Sarcoma, Periosteal Group, Ossifying Type—Benign Ossifying Periosteitis and Myositis. *J. Radiol.* 9:3.

Confusion of terms arises in designating types of sarcoma. The author suggests the term "ossifying" to describe the type in which bone formation predominates. Benign ossifying periosteitis and benign ossifying myositis are known.

There is also an ossifying sarcoma. Since this has always been periosteal, the author suggests calling it ossifying sarcoma.

In one group of bone lesions there remains an intact bone shell covered with normal periosteum. Exploration reveals uninfiltiated normal soft parts and an unthickened periosteum. The periosteum strips back from normal, white opaque bone. Stripping back the periosteum reveals minute droplets of blood from the haversian canals. The first change from the normal is absence of blood and dark appearance of the bone.

The shell of bone may be as thin as parchment but feels like normal bone. It may be slightly rough, or may crepitate.

Tuberculosis may appear as a central bone lesion with an intact bone shell. Syphilis and pyogenic osteomyelitis have never been noted as central lesions with an intact bony shell and with out an ossifying periosteitis. In multiple myeloma and metastatic carcinoma especially from hypernephroma, there may be a central bone lesion with an intact bone shell and without ossifying periosteitis.

Fractures may occur in all types of central bone lesions. Ossification never takes place in the central lesion except in the bone cyst or osteitis fibrosa.

The author classifies sarcoma as follows:

A. Ossifying type (extensive periosteal bone formation) (s) the shaft beneath the bone formation appears normal, (i) the shaft beneath shows osteoporosis or destruction.

Cases of Type A are the more common. The diagnosis of sarcoma can usually be made from the X-ray picture alone, but sometimes chronic osteomyelitis, syphilis, traumatic periosteitis, myositis,

and exostosis cannot be differentiated from this type.

B. Sclerosing type (i) little or no periosteal bone formation, (s) considerable bone formation, (s) excessive periosteal bone formation.

C. Osteoporosis. Destructive type I the early stages this may resemble osteoporosis from non use.

D. Definite palpable periosteal tumors in which the X-ray shows no bone formation.

On palpation, excessive ossifying periosteal sarcoma may suggest benign exostosis or ossifying periosteitis.

JOHN MITCHELL, M.D.

Hallick, A. C. Fibrous Ankylosis, Its Prevention and Remedies. *Med Times* 1933 11, 148.

The author stresses the importance of early massage and passive motion after fractures, epiphyseal separations, dislocations, sprains, and other injuries. It hastens the removal of extravasated blood, causes gradual recession of the edema, prevents stiffness, helps to check muscle waste, prevents adhesions, and hastens union. However in fractures of the patella, the head or neck of the femur or humerus, and the olecranon process and in complete fractures of the epiphyseal part of long bones in general, it cannot very well be given.

Of a total of 4,886 cases of fibrous ankylosis treated by the author at St. Luke Hospital and the Hospital for Ruptured and Crippled in New York, 33 were discharged as cured and 23 as improved. In 414 there was no improvement. The fibrous ankylosis was due to fractures and other injuries and arthritis. D. H. LARIVIERE, M.D.

Fursten, R. V. A Clinical Study of Thirty Cases of Muscular Dystrophy. *J. Bone & Joint Surg.* 9:3.

The author studied his thirty cases of muscular dystrophy from the clinical, metabolic, roentgen, and epigraphic standpoints. He gives Erb classification of the various types. The entire subject is discussed very thoroughly. This article is complementary to the article of Fursten, colleague, Gibson, Martin, and Broad which appeared in the *Archives of Internal Medicine* in 1933.

Fursten states that in neither the juvenile nor the infantile form is the reaction of degeneration present nor are there any fibrous t changes. He quotes Gower's conclusions as follows:

The disease is almost never known to be transmitted through the father.

The date of onset is important, the younger the age of onset, the poorer the prognosis.

3. Per equinus is the most constant contracture.

4. The ability to stand is usually lost between the tenth and fifteenth years of age and death occurs between the fourteenth and eighteenth years.

Fursten states that the hypertrophic and trophic types in the infantile variety should not be strictly differentiated as it appears that one may often follow the other in the ordinary course of the disease. Of the series of cases studied twenty five are those of

males and five those of females. The average age was 33 years. The oldest patient was 38 years, and the youngest 2 years. The average age of onset was 3 years. The oldest 1 years and the youngest a few weeks. Twelve cases were treated for from two weeks to three months with various glandular extracts (pituitary, adrenal, parathyroid, and pineal) without any appreciable effect. Seven cases were treated with calcium lactate, and eleven with massage and exercise (either with or without glandular treatment). The author believes that calcium lactate is of some benefit.

Most of his cases were slowly progressive, eight moderately progressive, and nine rapidly progressive. Wassermann tests made in fourteen cases were negative. The microscopic blood picture was normal in six cases examined. In all cases the reflexes, with the exception of the cremasteric and abdominal reflexes, were either absent or greatly diminished. Microscopic examination of muscle, made in four cases, showed the fibers to be pale and with diffuse areas of granular degeneration and vacuolization. There were also areas of fat infiltration between the fibers. The striations are present except in few areas where complete degeneration had taken place.

In summarizing Funsten states that it seems very difficult at the present time, either from the evidence presented by many authors or from his own observations, to draw definite conclusions as to the etiology of the progressive muscular dystrophies. If one is influenced entirely by the theories of endocrine organs he will find many stumbling blocks. It is hard to believe that cystic tumor, other disease of one of these glands can always locate itself in just the area to cause repeatedly the identical or almost identical clinical entity. The evidence introduced in this respect does not always seem to be entirely sound. On the other hand, the recoveries reported in the literature and those in the author's own cases seem to be beyond question. In progressive muscular dystrophy there is not the low figure coefficient, within physiological limits, that one would expect to find. The muscle fibers which remain unaffected by the disease seem to be acting to the extent of their normal limit. It is generally conceded that the amount of blood sugar is low and that when sugar is fed it is rapidly excreted. Possibly something happens to the muscular substance which should activate the transforming enzyme. To determine the etiology of the condition more pathologic and chemical study must be made by men who go into their work with substantial knowledge of what has already been said and done on the subject.

PALMER LEWIS, M.D.

Tabby, A. H. Dupuytren Contraction of the Palmar Fascia. *Practitioner* 93, 14.

The author gives an excellent description of the onset of the contraction and states that microscopic and bacteriologic examinations of specimens disprove the theory that it is due to infection of the palmar fascia entering through the sweat glands of

the palm and causing a chronic septic lymphangitis. He believes that the contraction is fibrous or the local expression of some subtle change in the bodily metabolism. It frequent association with hemiparesis and almost constant association with a source of infection suggest that it has some relationship to

low grade sepsis, particularly that arising from infections in the alveoli and gums. Just as arthritis deformans is more common in injured joints or those which persistent strain has been thrown, the contraction appears in the palm which is exposed to trauma and irritation.

The wedge dissection of all involved tissue is indicated. In addition, an injection of fibrolysin should be made at five or six points in the surrounding tissues before closure of the wound. This, Tabby believes, will prevent return of the contraction. The after-treatment is splinting in full extension for a week, followed by passive motion to prevent stiffness.

WILLIAM H. BYFORD, M.D.

Moore, B. H. Abnormalities of the Fifth Lumbar Transverse Processes Associated with Sciatic Pain. *J. Bone & Joint Surg.* 9, 3.

There is still a divergence of opinion regarding the relationship between abnormal transverse processes of the fifth lumbar vertebra and sciatic pain. Adams in 1901 first suggested that such abnormalities might be the cause of the associated sciatica. The X-ray often reveals winged or sacralized processes in persons without symptoms, but persons with severe sciatica may present sacralized transverse processes.

The author reviews nine cases. The first was that of a woman 24 years old, the mother of four children who for five years had had pain low in the lumbar region and in the upper part of the left hip just outside the sacroiliac joint. Examination revealed a moderate but to the right and moderate tenderness over the lower portion of the left lumbar muscle. In forward bending there was pain in the left hip about an inch outside the sacroiliac joint, and the spine could not be brought beyond the vertical. The muscles of the left thigh and leg were less firm than those of the right. Sensory changes were not marked. The Wassermann test was negative. X-ray stereoscopic plates revealed on the left side a large fish-tailed transverse process which, in its upper portion, impinged on the ilium. No arthritic changes were seen.

Operation performed February 24, 1919, consisted of transection of the left fifth lumbar vertebra. The postoperative X-ray examination showed that not all of the process had been removed. The patient made a good recovery and has had no pain since three weeks after the operation.

The second case presented a long, hypertrophied fifth lumbar process on the right side which was in contact with the ilium, and a strong fibrous cord extending from the tip of the process to the inner surface of the ilium. A transection was done and the cord cut free.

The other cases had similar histories and physical findings. In one the author excised the portion of the ilium impinged upon by the transverse process. Transversectomy was not done. In another case with right sciatic pain and marked limitation of motion in the lumbar spine complete relief followed totallectomy.

Several theories have been offered to account for the pain: one, that it is produced by pressure on the soft parts between the transverse process and ilium, another that it is caused by arthritis or irritation of abnormal bursae or joints. Third, that it is due to struts of the sacro-iliac and lumbosacral joints caused by leverage of the transverse process, and a fourth, that it is the result of stretching or pressure on the nerves of the lumbosacral plexus.

In none of the cases operated upon by the author was muscle found interposed between the process and the ilium. Neither were bursae discovered. I Moore opposes the leverage theory, seems most plausible as leverage would cause shifting of the entire fifth lumbar vertebra.

Various methods of treatment have been employed and all of them have given good results in certain cases. Opinions differ as to the results of operation. The author made 6-in. skin incision over the posterior portion of the iliac crest, stripped the lumbar and gluteal muscles subperiosteally from the crest, and removed segment of bone s by m from the iliac crest where the transverse process impinged.

No plaster or braces were used. The patients got out of bed in ten to fourteen days, and back bending exercises were begun as soon as they were possible without discomfort. JONES MINOR, M.D.

Nuttall, H. C. W. Tuberculosis of the Sacro-Iliac Joint. *Lancet* 1913 Oct. 25.

The author surveys the literature on this subject and presents the records of nine cases. The sacro-iliac joint is an arthrodial or gliding type of diarthrosis. The ligaments may be divided into two groups, the capsular and the accessory. The capsular ligaments are the superior inferior anterior and posterior sacro-iliac, and an interosseous. These are blended together to form the capsule and prevent the spread of pus posteriorly. The accessory ligaments are the great and small sacro-sciatic, the sacro-lumbar and the ilio-lumbar, and the lumbar apophyseous, the tendon of the erector spinae, and the fascia lata. These, by their extensive attachments, prevent excessive movement at the joint and provide a stout pelvic brace after extensive resection.

Movements of the sacro-iliac joint, which are limited in extent, consist of an up-and-down and forward-and-backward gliding and slight rotation on a transverse axis. During pregnancy these movements are increased.

The nerve supply consists of the superior gluteal and branches from the anterior and posterior primary divisions of the first and second sacral

nerves. The lumbosacral and obturator nerves are related to it anteriorly. The nerve roots concerned include practically all of those forming the lumbosacral plexus.

The intimate relations are above the iliacus and psoas, below the pyriformis, the superior gluteal nerve, and the gluteal vessels posteriorly; the dense ligaments and the erector spinae anteriorly; the internal iliac vessels, the lumbosacral cord, and the obturator nerve; externally the ilium covered by the glutei and internally the upper sacral foramina and the sacral nerve roots.

Sacro-iliac tuberculosis is rare as compared with tuberculosis of the spine or hip. With regard to its age incidence the author states that his patients were between 20 and 30 years old. Five were females. The primary focus is invariably in the bone, and more frequently in the sacrum than in the ilium. Necrosis occurs frequently and sequestra are common. Abscesses form and, in growing, follow the line of least resistance, extending either down the psoas sheath to the thigh or upward into the iliac fossa. As a rule, the abscesses are intra-pelvic. Extra-pelvic abscesses point into the buttock.

The symptoms include swelling or lump which in some cases follows an injury or sprain. The initial symptom is usually pain in the hip, the knee, the lower part of the back, the buttock, or the inner side of the thigh. Usually this is worse at night and is increased by movement. There may be also a slight ankylosis due to the bearing of more weight on the sound limb. Tenderness may be noted on pressure directly over the posterior inferior iliac spine, where the joint closely approaches the surface. Later signs are reflex muscle spasm with lordosis and flexion of the hip, muscular atrophy, flattening of the buttock, and disappearance of the gluteal fold.

The X-ray will show bone changes after the disease has progressed one or two months.

The condition must be differentiated from acute infections (pyogenic or gonorrheal), osteo arthritis and sprain, affections of neighboring bones and joints, sarcoma of the ilium or sacrum, malformations of the fifth lumbar vertebra, true sciatic neuritis, tumors of the cauda equina, growths in the pelvis, ovarian and uterine disease, and appendicitis.

The prognosis is unfavorable. The only case in the author's series which was cured was the only one subjected to excision. Picquet, however, reported five cures in seven cases following radical treatment.

In the author's opinion the old method of treatment by trephining and curetting was not sufficiently radical, and the value of the bone graft operations described by American surgeons is doubtful. Children, however, should be treated conservatively.

In Picquet's method of treatment the joint is approached by cutting away the overlapping portion of the ilium, part of the sacrum is resected to permit the complete evacuation of any intrapelvic

abscess, and a smooth granulating surface is formed in the diseased areas by means of gauge or curette. The entire area is then sutured with 'bapp' and the wound packed with gauze soaked in iodoforn emulsion. The ends of the packs are brought out at the middle of the incision and the incision is sutured. After forty eight hours the packs are removed under nitrous oxide anesthesia. The patient is kept in bed with the pelvis firmly bandaged for four or five weeks, after which time a pelvic belt is fitted and he is allowed up on crutches. Usually the crutches may be discarded at the end of the twelfth week.

D. VAN H. LUTHER, M.D.

Blatt, E. S. Sacro-Iliac Arthrosis Obliterans
Am J Roentgenol 9 3 2, 89

In studies of the lower part of the spine in approximately 800 cases, unusual changes in the sacro iliac joint were found in eighteen. With such changes there is history of dull pain, soreness, and stiffness of the back and an uncomfortable feeling in the lower spine, which increase in intensity from a period of several months to a year. There is no history of injury. The clinical findings are spinal rigidity with limitation of motion of the lower back, localized tenderness over the sacro iliac joints and the lumbar spine and a variable degree of atrophy of the erector spinae muscles.

In most cases the condition is bilateral. In early joint disease the roentgenogram shows comparative decrease in the sharpness of the joint edges which may be due to localized edema and swelling of the articular surface tissues. If the disease has progressed, the shadows indicate erosion of the articular surface edges, the interarticular distance being apparently increased. If the disease is more progressive there is considerable decrease in the interarticular distance between the sacrum and the ilium due to loss of the intervening cartilage. An advanced case shows total obliteration of the involved joint resulting in synarthrosis. In some cases reparative process is evidenced by bone hypertrophy around the obliterated joint.

There are no very marked differences between this condition and typhoid spine. Septic arthritis results in synarthrosis depending upon the virulence of the invading micro organism. Chronic hypertrophic osteo arthritis involves essentially the edges of the articular surfaces, and immobilization is caused only by rhizitis deformans. In the articular surface there is practically no demonstrable change. Other joints are usually involved simultaneously. The cases reported in this article were those of persons under 30 years of age. Chronic arthritis usually affects those over 35.

Tuberculous arthritis is seldom bilateral. There is rather extensive softening of the cancellous bone around the involved joint with greater amount of destruction. A healed tuberculous process usually results in synarthrosis but with much more alteration in the joint relations than in the cases described.

ROBERT S. ROSS, M.D.

Jensen, M. On Coxa Plana and Its Causation.
J Bone & Joint Surg 9 3 265.

In addition to the gradual flattening of the head, fragmentation, and the development of a broad and horizontal epiphyseal line in so-called Legg's or Perthes disease the author draws attention to the changes in the acetabulum. He states that an important mechanical factor in the development of coxa plana is this flattened socket with an associated ilchum varum. As the result of this, most of the body weight is brought directly upon a small area of the head, since the head rests only in the upper portion of the too large and too flat acetabulum. The pressure stress causes a shifting of the lines of stress in the head and neck of the femur to which the head gradually conforms. The epiphyseal plane becomes more horizontal, parallel with the area against which it acts in the acetabulum. It is well known that an increase of pressure may lead to decrease of growth, particularly when the power of growth has been enfeebled.

The author is inclined to the belief that congenital dislocation of the hip and coxa plana are very closely related. They often occur in the same person or family. One of the main causes for congenital dislocation is the shallow acetabulum, and the reason coxa plana so often develops following the reduction of a dislocated hip is the faulty fitting of the head in the acetabulum and the resulting stress changes in the bone.

In the treatment the patient should be relieved of weight bearing and given free motion of the joint.

ROBERT V. FOSTER, M.D.

Johnson, S. An Apparently Hitherto Unknown Disease of the Patella (Eine bisher noch unbekante Erkrankung der Patella) *Zisch J orthop Chir* 9 xlii 8

The author describes a change in the tip of the patella similar to Osgood Schlatter's disease which he has observed in three cases. This condition is found at the age of puberty and manifested clinically by a distinctly circumscribed tenderness without signs of inflammation. The X-ray shows loosening and dispersion of the bone substance. An injury is usually given as the cause. In one case a change in the bone resembling Osgood-Schlatter's disease was noted also in one tuberosity of the tibia. Treatment with rest and compresses usually causes the disappearance of the symptoms in a few weeks.

NEWMAN (2)

**SURGERY OF THE BONES, JOINTS
MUSCLES, TENDONS, ETC.**

Campbell C. W. Transference of the Crest of the Ilium for Flexion Contracture of the Hip
South M J 9 3 xvi, 249

The author describes a very ingenious original operation for the relief of flexion contracture of the hip. He states that flexion contracture of the hip greater than 60 degrees renders the extremities

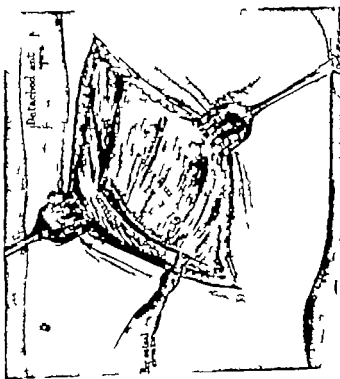


Fig. 1. Gluteal muscles with small portions of crist of the ilium being detached.



Fig. 2. A. Surface of bone being prepared to facilitate new attachment. B. Surface of bone left raw to allow sequestrum and infarct spaces roughened for new attachment of gluteal muscles.

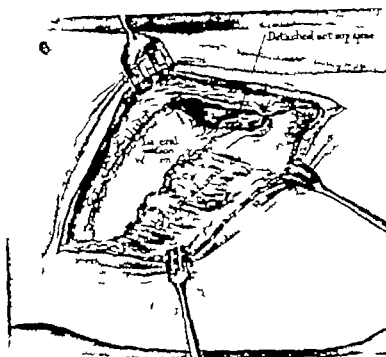


Fig. 3. Read for closure. Gluteal muscles dropped into new position and fascia partially closed over detached antero-superior spine.

practically useless and when both limbs are affected the individual becomes quadruped because walking in the upright position is impossible.

The operation described is a modification of and an addition to, the Soutter operation. The author has used it in more than thirty cases. The results have been 100 per cent successful and the procedure has been found especially valuable in the cases of quadrupeds whose condition followed infantile paralysis. Campbell recommends the operation for contractures following infantile paralysis, infectious arthritis, hemiplegia, spastic paralysis, and congenital dislocation of the hip in older children. The technique is as follows:

The hip is incised along the incision one half or two-thirds of the crest of the ilium to the antero-superior spine and then downward to the outer aspect of the rectus muscles for about 4 to 6 inches. A typical Spangier approach to the hip as recently advocated by Smith Peterson. The superficial and deep fascia are incised; the crest and antero-superior spine and the antero-superior spine is removed with sharp osteotome. The outer one-fourth of the crest is chiseled through from before back and the anterior two-thirds, or the entire crest as necessary, and then with a heavy osteotome the entire mass is peeled subperiosteally downward to the line of the acetabulum above which tract of bone about 1/2 inch in diameter is denuded parallel with the crest of the ilium.

The raw surfaces of the transferred crest of the ilium and antero-superior spine fall by gravity, so that the raw bony surfaces approximate. If this does not reduce flexion, the anterior structures, such as the psoas, fascia, or capsule of the hip joint may be easily attacked. The superficial fascia above is stitched to the deep fascia at a point below the all incision being brought about in below the crest of the ilium to avoid possible pressure. The skin is closed with dermal sutures. A plaster cast, applied in hyperextension, is worn for eight weeks.

Campbell has had no fatalities and no alarming symptoms in the use of this procedure. He describes the "transference of the crest of the ilium" because in from two to three months a massive bony ridge can be found along the line of attachment of the new crest.

To illustrate the type of condition under consideration though practically all hip contractures are amenable to this procedure one case is briefly described and illustrated.

This operation is based upon proper mechanical principles. The removal of the crest with the attached outer one-fourth and the denudation of the dorsum of the ilium gives an attachment of the muscles which is more firm than if they were merely severed and left loose in the soft tissues. Bony union between these points renders subsequent contracture impossible recurrence which might develop if the muscles remained loose in the soft

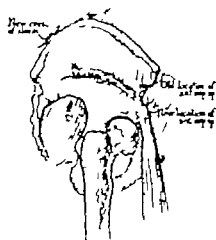


Fig. 4. Schematic drawing showing condition one year after operation, with the formation of a new crest of the ilium and attachment of the antero-superior spine.

themselves. There is no great interference with the blood or nerve supply. The attachment is merely transferred to a lower point. This corrects the deformity and in no way inhibits physiological muscle action.

One very extreme case of quadruped locomotion in which a remarkably good result was obtained is shown by photographs taken before and after operation. Foster Lewis, M.D.

Fisher A. G. T. Internal Derangements of the Knee Joint. A New Method of Exposure. *Lancet* 1923, civ 945.

One of the most important causes of poor results in the operative treatment of internal derangements of the knee joint is inadequate exposure with consequent incomplete operation. With certain exceptions, most operations for internal derangements of the knee should be of the nature of an exploratory arthrotomy.

Exploratory arthrotomy is indicated by

The difficulty of differentiating loose bodies, lesions of the internal and external semilunar cartilages, hypertrophy of or hemorrhage into, synovial fringe or alar pad, and the more rare causes of anomalous symptoms, such as foreign bodies in the joint, isolated hyaline, diffuse osteochondromatous of the synovial membrane, and sarcoma. Before arthrotomy is done extra-articular causes which interfere with tendon action and may give rise to similar symptoms must be excluded.

Co-existent pathologic factors. Synovial chondromatosis or osteochondromatosis are not infrequently found associated with injury of the semilunar cartilage or the presence of loose body. Hypertrophy of the infrapatellar pad of fat is also

commonly associated with other internal derangements.

In the author's opinion transfixation and local removal of a loose body is unsatisfactory unless it is followed by complete exposure.

As a rule curved or straight lateral incisions over the joint space do not yield as satisfactory results as the more complete exposure.

The transpatellar incision into the knee joint gives a good exposure of practically the entire anterior compartment. In the hands of the surgeon who originated the method this is a procedure giving good results, but there are physiological objections to the transpatellar route particularly if the most crucial apposition of bone and cartilage is not obtained. True cartilaginous repair does not take place in incisions in the center of articular cartilage and, if such incisions heal at all it is by an imperfect fibrous tissue. Imperfect position may set up traumatic osteo-arthritis causing harsh grating when the patella is moved, aching and pain.

The operation described by the author is particularly applicable to cases in which the symptoms indicate derangement at the inner side of the joint. If the derangement is at the outer side of the joint, the positions of the incisions in the skin and capsule are reversed.

The skin is prepared by the application of iodine and tourniquet is applied. The incision is begun in the midline an inch below the uppermost limits of the suprapatellar pouch, is curved slightly round the inner border of the patella, extended along the inner border of the ligamentum patellae and ended below and slightly to the inner side of the tubercle of the tibia. The skin and subcutaneous tissue are reflected out and a midline incision is then made through the fascia covering the quadriceps tendon and extended downward as far as the tubercle of the tibia. The quadriceps tendon, the peroneum of the patella, and the ligamentum patellae are opened. This fascia is raised and reflected in and the capsule is then divided 1 1/2 in. from, and parallel with, the inner border of the patella, the incision being extended upward through the inner fibers of the quadriceps tendon and downward along the inner border of the ligamentum patellae. The synovial membrane is then divided along the line of the capsular incision and the patella dislocated to the outer side of the joint. On further flexion of the joint excellent exposure of the entire anterior compartment is obtained. The introduction of the finger is poor technique and with this incision is unnecessary. In some cases the infrapatellar pad of fat and the alar pad must be cut. There is no objection to moving the joint during the operation, in fact this frequently facilitates the discovery of loose bodies or tags of cartilage.

After the completion of the intra-articular stage of the operation the knee is extended, the patella replaced and the synovial membrane closed with a continuous suture of fine catgut. The incision is

the alar pad is carefully sutured. If the pad shows pathologic changes it is removed. The capsule is closed with continuous suture of stout chromicized catgut. The fascial flap is next sutured with continuous suture of medium catgut. The skin is sutured with interrupted silkworm gut sutures. The tourniquet is not removed until the dressings and bandages are applied.

The after treatment consists in supporting the limb in slight flexion on pillow. No splint is used. The skin sutures are removed on the seventh day, when active and passive movements and massage are instituted. The patient is up in a chair daily, and at the end of the second week begins to walk. The massage and movements are continued. At the end of the fourth week the patient is able to walk almost normally. D. VIEL H. LAFITTE, M.D.

Steindler, A. The Treatment of the Flail Ankle.
Pannagraloid Arthrodesis. *J Bone & Joint Surg* 9, 3, 384.

The operation presented consists in the complete denudation of cartilage from the astragalus and all its articulations. This causes an arthrodesis of the astragalo-tibial, astragalo-scaphoid, and astragalo-calcaneal joints. A plaster cast is then applied to the limb from the toes to above the slightly flexed knee for three to five months. Toe drop of about 20 degrees is allowed.

The operation is indicated especially in cases of flail ankle in which there is an equinus, equinovarus, or equinovarus but of much deformity. The presence of the extensor of the knee or part of the flexors of the knee is of great importance but strong gutlet might be sufficient for good knee action after the operation.

Faulty alignment of the knee must be taken care of by an additional osteotomy of the tibia.

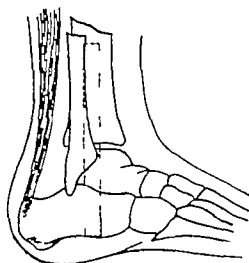
The ankylosis obtained by this method is thorough and solid, and in the majority of cases the X-ray shows complete fusion of the joints. In cases of extreme calcaneocavus in which backward displacement of the foot is of advantage, the Whitman astragalectomy is preferable.

The author reviews thirty-six cases treated by arthrodesis. Twenty-one of the patients have been examined a year or more after the operation. Of these eighteen walk with the foot in the correct position and without braces.

Steindler feels justified in recommending the operation as especially suited for drop foot or drop dangle foot. ROBERT V. FINEBERG, M.D.

De Blatis, T. R. Arthrodesis of the Ankle (Sobre artrodesis del tobillo). *Rev espes de ciruj* 923, 494.

The author's technique for arthrodesis of the ankle is combination of resection of the articular cartilage and the placing of transosseous bone graft of the Lexer type. In the first stage of the operation a large Kocher arthrotomy is done with semicircular incision including the external malleolus



The placing of the bone dowel

and extending to the dorsal part of the foot in the median line. The external lateral and calcaneal ligaments are sectioned and the peroneal tendons are freed by dissection at their upper end. The external tendons of the toes are carefully freed to avoid injuring them and to prevent rupture of the dorsal vessels of the foot. The joint is then opened and the foot held inward so as fully to expose the articular surfaces. All of the investing cartilage is then removed, including that of the astragalar pole.

The planter stage of the operation consists of a median plantar incision which is carried to the bone and perforation of the calcaneum and astragalus by an electrically driven drill directed so that it will perforate the tibia. The perforation of the tibia can be made either through the calcaneum and astragalus or directly by luxating the foot. The bone dowel is taken from the tibia and dusted carefully to the bone tunnel.

Finally the distal ends of the peroneal tendons are sutured to the peroneum of the external malleolus and may or may not be sutured to its proximal ends. The operation is concluded by enlarging the proximal ends by Bier tenoplasty and suturing the distal ends to the external surface of the calcaneum.

The operation is applicable especially to cases of infantile paralysis. In one case treated in this manner by the author the bone graft had not been resorbed one year after the operation. W. A. BRENNAN.

FRACTURES AND DISLOCATIONS

Bérard, L. Bone Grafts (Greffes osseuses). *Brussels med* 9, 3, 407.

Bérard deals with thirty-eight cases of bone grafting done at the surgical clinic of the University of Lyons, which he has been able to follow for a long

period. I bedar grafts were usually employed at first, but recently the graft have been taken from the tibia and the instrumentation of Albee has been adopted. I depth the piece of bone removed extended to the medullary canal. The periosteum was left in place. In Bérard's opinion the presence or absence of the periosteum does not seem to have any influence upon the evolution of the graft.

Osteoplastic grafts of the Other Delegation type have been used only to obliterate skull defect. In cases of persisting pseudarthrosis I one of the extremities, and cases of delayed consolidation. Homografts are employed in four cases and grafts of dead human bone in five.

The grafts were placed as follows: cranium, four; spinal column, five; humerus, two; radius, ten (eight autografts and two homografts); ulna, three (two autografts and one homograft); tibia, eleven; and femur, two.

In twenty-five of the thirty-eight cases the entire graft became consolidated. In six cases small fragments are eliminated because of suppuration in the neighboring soft parts, but the final result is not definitely compromised. In seven cases there was late elimination of the graft. In three of these the pseudarthrosis persisted, but in the others consolidation was favored by the temporary presence of the graft and became effective after one or two years.

To obtain good results in beef bone grafts, the contact with the host bone must be as close as possible. Whether the grafts be dovetailed into the medullary canal, placed according to Albee's technique or made to adhere simply by sliding them over the surface. If it is necessary to hold the fragments in position, catgut or tendon sutures or metallic wire should be used. These are preferable to the Lambotte or Lane screwed plates as when such metallic plates are left in place for a long time they tend to cause necrosis of the superficial layer of the graft and the graft is eliminated when the plate is removed. Moreover even if the plates are kept in place for a long time total resorption of the graft may occur.

The best results are obtained with autogenous grafts taken from the bone to be repaired or some other part of the skeleton. Homogeneous grafts are less well tolerated, more easily eliminated by infection, and more easily resorbed. It appears that they serve only to contain mineral matter and as framework for the repair of the bone loss by the remaining fragments. The same is true of grafts of dead bone.

In the cases studied the grafts examined microscopically some time after the operation had the appearance of living bone. W. A. Bary.

Bary, L. The Technique of the Operative Reduction of Old Luxations of the Shoulder (Technique de la réduction opératoire des luxations anciennes de l'épaule). *J. de chir.* 9:1 321, 45.

Bary has devised a new technique for the operative reduction of old dislocations of the shoulder

which he claims is more simple than procedures employed heretofore.

Free access to the luxated head and the glenoid cavity is obtained by making a critical incision along the glenoid cavity and a transverse incision forming with the first incision an inverted L or T.

Temporary resection of the coracoid process is then done to facilitate exploration of the luxated head and to throw enough light on the axillary nerves and vessels so that injury to these structures, most serious complication may be avoided.

Resection of the subscapular muscle permits simultaneous reduction of the luxation and opening of the articulation for exploration of its cavity. The retracted subscapular muscle is the principal obstacle to the replacement of the luxated head. The dissection of the subscapular muscle permits wide opening of the joint and gives a view of the old and new articular cavity so that the reconstruction of an anterior capsular insertion can be accomplished. The scapulo humeral articulation is reconstructed by suturing the deep surface of the subscapular to the glenoid ridge and reimplanting the muscle on the small tuberosity. W. A. Bary.

Hannecart, A. Wire Circling of the Olecranon by New Method (Cercilage de l'olécranon par une technique nouvelle). *Arch. franc.-belg. d. chir.* 9:3 231, 99.

Hannecart's method of osteosynthesis of the olecranon makes use of the coracoid process to support the bronze aluminum wire which encircles the olecranon and passes through the tendon of the brachial triceps.

Hannecart has used this method in two cases. One was a case of subluxation of the elbow and a fracture of the upper extremity of the ulna. In both cases the method was easy to carry out and entirely satisfactory. It is indicated in (1) that it can be used in all cases; (2) that the coaptation of the fragments is perfect if they are multiple; (3) that the method is easily mastered and maintained; (4) that the metallic wire does not increase the bone and therefore does not cause trophic changes such as osteoporosis; and (5) that mobilization of the joint is possible about the twelfth day or earlier. W. A. Bary.

Towne, L. B. Fracture-Dislocations of the Carpal Bones. *Surg. Clin. N. Am.* 9:3, 24, 74.

The X-ray has greatly increased our knowledge of the signs and mechanism of three common injuries viz. fracture of the scaphoid of the radius, anterior dislocation of the semilunar and anterior dislocation of the semilunar with fracture of the scaphoid.

The author reports four cases which illustrate the final result of carpal injuries.

Case 1. A man 35 years of age who was struck in an automobile. The force of the fall was received in the right palm with the wrist and elbow fully extended. Examination showed slightly swollen distal hand and considerable thickening

ing of the wrist. A hard prominence was felt under the flexor tendons distal to the forearm bones and another on the dorsum of the wrist between the base of the third metacarpal bone and the lower end of the radius.

A roentgenogram revealed an anterior dislocation of the semilunar and fracture of the navicular. The semilunar and the proximal fragment of the navicular were pushed forward and rotated anteroposteriorly 30 degrees by the capitate and other carpal bones.

Two days after the injury the dislocation was reduced by pulling the hand down in the line of the forearm, and with continued traction the wrist was hyperextended. Splints were worn until the fourth day when they were removed daily for physiotherapy. On the thirteenth day the splints were discarded. Ten months after the injury the wrist was normal.

Case 2 was a case of anterior dislocation of the semilunar and the proximal fragment of the navicular associated with median nerve injury, paresthesia, anesthesia and severe cyanosis. This case was not treated for five weeks after the injury as the condition had not been diagnosed before the author was consulted. The lunate and proximal fragment of the navicular were excised through a volar incision. The median nerve showed moderate hyperemia only. Four weeks after the operation the sensory loss, the palsy of the small muscles of the hand, and the vasomotor disturbances were unchanged. The wrist had palmar flexion of 45 degrees and ulnar flexion of 15 degrees, but no extension or radial flexion.

A second operation was therefore performed as it was thought the restriction of radial and dorsal flexion was due to the presence of the distal fragment of the navicular. One year after the second operation no further improvement was noted. The hand remained weak and showed considerable muscular atrophy.

Case 3 was a case of anterior dislocation of the proximal fragment of the fractured navicular with posterior dislocation of the lower end of the ulna and compression of the median nerve. Closed reduction accomplished on the second day was followed by an excellent functional result.

Case 4 was a metacarpal fracture dislocation, peritriquetral anterior dislocation of the hand with fracture of the navicular. Examination revealed interosseous thickening of the distal and base of the metacarpal bones. The bases of the metacarpal bones were displaced forward. Closed reduction after ten days resulted in good function.

JOHN MURPHY, M.D.

The accident was followed by complete paralysis of the lower limb and retention of urine. The X-ray showed luxation of the first lumbar vertebra backward and to the right of the second, and fracture of the right transverse processes of the third and fourth lumbar vertebrae. The terminal medullary cone and the nerves of the cauda equina were destroyed. Such a case is exceptional. Under treatment by continuous extension, massage and spontaneous urination slowly returned, but the patient is still under treatment after several months.

The second case was a forward luxation of the fourth cervical vertebra with quadriplegia in a man who was hurt in a football game, his chin striking against the sternum in forced flexion. After the accident the patient was unable to move his head or limbs and suffered retention of urine. The X-ray showed that the fourth vertebra had passed in front of the fifth the upper part of the cervical column being pushed forward, and that the lower articular process of the fourth had passed in front of the upper process of the fifth. Reduction was effected under chloroform anesthesia. Three weeks later the patient was able to walk, and one month and half later was in fairly good condition.

The third case was that of a man who fell while carrying heavy weight on his shoulders, the weight causing forced flexion of the cervical column and forcing the chin against the sternum. The accident was followed by total paralysis of the limbs, retention of urine, and priapism. X-ray examination showed displacement of the fifth cervical vertebra. The articular processes of this and the next vertebra were widely separated. Medullary lesions were marked. Reduction was easily effected but a few days later the patient fell into coma and died. At autopsy the cord was found lacerated at the site of the luxation and completely sectioned between the fifth and sixth vertebrae.

Dhaluin discusses the mechanism of spinal luxation and includes in his article several roentgenograms of his case.

W. A. BARRY.

ORTHOPEDICS IN GENERAL

Constantine M. and Moffat, B. W. Managing Orthopedic Cases. *Trends Nurs & Hosp Rev* 9 3, 422-425.

Stockinette jackets are used for body casts, and the bulky stockinette is employed for casts of the extremities. Prominent bones and kyphoses are protected from pressure by gray felt about 1/4 inch thick. The most acceptable padding is cotton wadding about 1/2 inch wide.

Dental plaster usually sets quickly but most other plasters require at least a handful of salt in a basin of water. The plaster rolls are immersed and handed to the doctor after they have stopped bubbling.

The finished cast should be exposed to the air for twenty-four hours and the patient turned to facilitate drying. A board should be placed under the

Dhaluin, A. Traumatic Luxations of the Spine (Des luxations traumatiques de rachis). *Arch France Belges de Med* 9 3, 422-427.

Dhaluin reports three cases of traumatic luxation of the spine. The first was that of a woman 47 years of age who had been struck by a street car.

mattress to prevent sagging and consequent breaking of the plaster. Bradford frames and the urine and patient materially after the application of spack.

If interference with circulation due to pressure of the cast or operative trauma must be relieved. The limb should be elevated and, if necessary, a vertical incision should be made in the cast or the entire cast split. If neglected, constriction may cause pressure sores, gangrene or Volkmann's paralysis. In the cases of old paralyzed, or emaciated patients pressure sores are almost unavoidable. If ringing pain under the cast and an odor over a certain area will aid in the detection of pressure sores.

Operative incisions covered by plaster should be observed by cutting a window in the cast. If hot dressings are to be applied, the stockinette should be pulled through the window and the edges sealed laced, the area thus being made waterproof.

Patients: a long space may be made more comfortable in a high Fowler position. Elevation of a leg recently operated upon relieves congestion and promotes healing. The skin may be rubbed and talcum powder distributed over otherwise inaccessible areas by passing it and from a bandage placed under the cast with its ends projecting.

Tubular jersey can be extended from under body cast and reflected over it and the upper edge sewed to the lower. Suspending infants and children with incontinence by tapes and rubber covered pillow prevents them from soiling the casts. The casts are shellacked when dry so that they can be washed clean when necessary. Rough edges should be smoothed.

For the removal of a cast the nurse should provide a plastic knife, plaster shears, and acetic acid or hydrogen peroxide to soften the plaster.

DANIEL H. LEVITZMAN, M.D.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Eloesser, L.: Aneurism of the Common Iliac Artery: Gradual Occlusion by Ligation with Free Graft of Muscle. *Surg Clin N Am* 9 3 12, 68

Reviewing the ligations of the iliac artery in the century from Gibson's first operation in 18 to Halsted's report in 9, Eloesser found that in total of ninety-4 0 ligations of the common iliac artery for aneurism there was only one fatality (Trendelenburg's case). The rarity of aneurism at this location is evident from the report of Lock and Rea on 1,000 utopias in which 3 1 aneurisms of the thorax and abdomen were found but none affecting the common iliac arteries.

The author reports the case of a man of 60 years with a history of severe scarlet fever and chronic cough with bloody expectoration. The diagnosis of chronic pulmonary tuberculosis was confirmed by the demonstration of tubercle bacilli in the sputum. The history was negative for lues, and repeated Wassermann tests were negative. In 9 8 the patient experienced a sudden attack of severe pain in the left groin which was associated with swelling in the lower abdomen and groins. Rest in the hospital for 1 month was followed by improvement, but subsequently a painless swelling of the left leg developed. This also gradually disappeared and the patient remained in fair health for three years.

In 9 an attack of severe pain in the back was followed by purplish discoloration of the perineum spreading to the hips and groins. Simultaneously swelling appeared in the lower abdomen in association with urinary frequency, swelling of both legs, and pressure in the rectum. Physical examination revealed systolic pressure of 146 mm Hg. The temperature and pulse were normal. A large pulsating expansile mass filled the lower abdomen and extended upward to within 5 in of the umbilicus. No murmur or thrill was noted at any time. The pulse in the right dorsalis pedis artery was good, but that in the left as at times barely palpable. Both posterior tibials pulsated. A diagnosis of aneurism of one of the left iliac arteries was made.

At operation anesthesia was induced with nitrous oxide and local cocaine infiltration. An incision was made in the left flank and the peritoneum pushed forward. The left iliac artery and vein appeared normal. The tumor was found to be retroperitoneal and to extend upward from the pelvis to the right kidney. The first incision was then closed and a second made on the right side. This was begun in above Poupart's ligament and extended upward and backward toward the costal

arch. The aneurismal sac was identified. Compression of the pedicle at the level of the right kidney obliterated the pulse in the sac. A muscle fascia graft 4 in long by 1 in thick was taken from the external oblique and swung around the artery. Catgut stitches were placed to hold the graft in place, and with second catgut ligature passed around the sling thus formed the pulse in the sac was completely obliterated. The wound was then closed. The operation consumed four hours.

The postoperative course was stormy. Pulsation returned to the aneurism. Thirty hours after the operation the patient went into shock. Two blood transfusions were followed by gradual improvement in the pulse and general condition. The legs were warm but showed slight edema. No pulsation was felt in the right femoral, the popliteal, the tibial or the dorsalis pedis arteries.

The aneurismal sac still remains palpable but is somewhat smaller. Pulsation is still demonstrable within the tumor mass. Both legs are edematous, but the pain and the urinary and rectal discomfort have largely disappeared. **John W. Norton, M.D.**

Kolin, L.: The Anatomy, Clinical Aspects, and Treatment of Aneurism of the Superior Mesenteric Artery (*Zur Kenntnis der Anatomie, Klinik und Therapie des Aneurysma der Art. mes. sup.*). *Arch f. Klin. Chir.* 9 3, 1900 684

Aneurisms of the superior mesenteric artery are seen very seldom. The case reported in this article was that of a man 30 years old who as suffering from endocarditis. Within a period of three months a palpable pulsating tumor developed in the epigastric region in association with severe attacks of pain which were followed by the passage of bloody stools. A very severe attack of pain led to laparotomy which revealed at the base of the mesentery an aneurism the size of an egg, which was covered by peritoneum and embedded in indurated tissue. In its removal, ligation of the superior mesenteric artery was necessary. No trophic disturbances were found in the intestine. Death occurred 12 the end of seventeen hours.

A topsy showed a dark red, somewhat distended intestine and blood in the stomach and intestine but no trophic disturbances. Dissection of the aorta showed that the vessel affected by the aneurism was the superior mesenteric artery. The ligature was 3 cm from the aorta. The aneurism itself was almost filled with coagulated blood.

The few cases so far reported in the literature and the anatomy of the superior mesenteric artery and its branches are reviewed. The author comes to the conclusion that ligation of the trunk will not endanger the nutrition of the intestine if the closure

of the lumen occurs gradually so that a sufficient collateral circulation can develop. If the vessels, particularly the pancreaticoduodenal artery (the connecting vessel between the superior mesenteric and the hepatic arteries) can become variably dilated. The development of the aneurism in Kohn's case as caused by mycotic embolism due to the endocarditis. To preserve the nutrition of the intestine it is necessary, in extirpating the aneurism, to ligate as near the intestinal wall as possible so that the other branches of the superior mesenteric artery particularly the jejunal arteries, will be spared. Ligation of the superior mesenteric vein alone nearly always results in a fatal intestinal infarction. The absence of unfavorable results following ligation of the vein in the author's case was probably due to the fact that the vein had been so compressed by the surrounding indurated retroperitoneal tissue that the venous return was rendered possible by the dilated gastro epiploica and inferior mesenteric veins. HUNTER (2)

Schoenbauer L. and Gold, E. Can Drainage Tubes Cause Erosion of Blood Vessels? (Können Drainageröhren Blutgefässe atrophieren?) *Arch f. Klin. Chir.* 1923, cxviii, 43

To determine whether a primary injury to the blood vessel is necessary for the occurrence of erosion hemorrhage or whether infection alone is sufficient, the authors introduced rubber tubes close to the blood vessels of animals and examined the resulting changes macroscopically and microscopically. In no case did they succeed in causing an erosion hemorrhage evidently because the arterial wall was particularly resistant to the bacteria used. They concluded that if the wound is kept aseptic and the vessels are sound, there is no danger of erosion. The blood vessels show no structural changes except proliferation of the intima and widening of the adventitia. For the occurrence of hemorrhage there must be decreased resistance of the vessel wall such as is caused by primary injury to the vessel or infectious necrosis. BARNES (2)

BLOOD AND TRANSFUSION

Bauer K. H. The Inherited and Constitutional Pathology of Hemophilia (Zur Vererbung und Konstitutionspathologie der Hemophilie) *Deutsche Zeitsch. f. Chir.* 1923, cxviii, 60

This extensive work is based on the 33 hemophilic families so far known. The empirical law of heredity is as follows:

I. hemophilia the sexes are reciprocal: the males are the bleeders, but do not transmit the condition, while the females, who transmit the condition, do not bleed. The author discusses the numerous attempts which have been made to explain this. In his opinion the hemophilia factor is coupled with the sex factor and is a recessive lethal factor.

The value of analyzing the inheritability of such a condition as hemophilia lies in the possibility of

demonstrating (1) single definite pairs of transmission in man, (2) transmission according to strict biological laws, (3) the localization of the transmitting factor in certain chromosomes and (4) its connection with another factor of transmission, the sex factor. Moreover a knowledge of the formal process of hemophilia and its chemico-physiological definition permits far reaching conclusions with regard to such types.

According to the theory of the biology of heredity all transmissible qualities are found, from the first nucleus division in the chromosome constituents of all other cells of the organism, each body cell inheriting the entire original chromosome combination. Accordingly, the hemophilia factor is present in every cell of the body. S. W. (2)

Dyke, S. C., Olson, D. P. H. and Budge G. H.: On the Inheritance of the Specific Iso-Agglutinable Substances of Human Red Cells With Notes on the Possible Existence of Lethal Factor. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Path. 35

From observation made on 351 persons constituting seventy-two families, the authors came to the conclusion that the properties A and B can never appear in the offspring, though having been present in at least one of the parents, and that when inherited, these properties appear in the offspring in accordance with recognized mendelian laws.

The observations forming the basis of this article were made upon material provided by the maternity ward of St. Thomas Hospital. With the co-operation of the nursing staff blood was collected from the umbilical cords of infants at birth and used for ascertaining the group of the child. Corporcles for the same purpose were obtained from the mothers as they lay in the beds, and from the fathers when they visited the hospital. These observations were conducted upon both parents and offspring in ninety-eight cases.

The blood for ascertaining the group of the infants as collected in a test tube and allowed to clot. The serum was then pipetted off and the corporcles were washed three times in a 5 per cent sodium citrate solution in normal saline. Blood was obtained from the parents by finger puncture, the drop being collected in similar citrate solution. The serum of the parents was not tested the group being determined by the reaction of the corporcles alone.

The grouping tests were performed with slight modifications in the manner previously described by Dyke.

In considering the group to which the offspring of an individual belongs it must be remembered that it is not the group which is inherited. The dominants A and B and the recessives a and b are the inheritable factors and it is on the presence or absence of these that the blood group depends.

So far as groups alone are concerned ten per cent mating is possible but thus all these types with one exception there are many possibilities.

The authors' conclusions are as follows:

1. The agglutinable properties *A* and *B* are demonstrable in the blood of the newborn.
2. In their genetic behavior these properties *A* and *B* are dominants.
3. In their genetic behavior the agglutinins *a* and *b* are recessives.
4. The properties *A* and *B* cannot appear in the blood of the offspring without having been present in the blood of the parents.

With regard to the possible existence of a lethal factor the authors state that the data at hand show that in all races, whatever the numbers of persons belonging to Groups II and III, those belonging to Group I are always the least numerous. It would seem that there is some factor which inhibits the ready production of Group I persons while there is no such inhibition in the case of the other groups. A suggestion as to the nature of this inhibiting factor is supplied by the known facts in regard to the lethal effect exerted in certain instances by the doubling of the dominant.

There are two possibilities: (1) That Group I includes only persons of this last formula, *AB ab* and (2) that the three other formulae may be present but the gametes produced by them bearing the dominants are not capable of fruitful union.

If the second assumption is correct, persons of the formula *AB AB* will be completely sterile, while persons of the formula *AB B* and *AB Ab* will produce only half their proper number of fruitful gametes.

Either assumption could account for the relative diminution of Group I persons as compared with Group IV persons. Which theory is correct can be ascertained only by a series of observations of unions in and among Group I persons, and such a series, because of the rarity of Group I, would be difficult to collect.

CARL R. STENNER, M.D.

Jantzen W. The Intravital Course of Hemolysis, with Discussion of Blood Transfusion and the Development of Shock from Transfusion (Der intravitale Verlauf der Hämolyse nachein Bluttransfusion und zur Entstehung des Transfusionschocks). *Alte Reichsarchiv* 93: 11, 20.

Immediate shock is to be expected only if the blood of the recipient is highly hemolytic for the erythrocytes of the donor. Under such circumstances destruction of the erythrocytes may follow immediately. If the serum is only weakly hemolytic and the blood grouping poorly defined, hemolysis will occur, but often too late for preliminary test (trial injection of 0.5 cm and observation of the reaction for ten minutes) to be of use.

When the serum of the blood injected destroys the erythrocytes of the recipient, hemolysis does

not occur before an hour. The clinical picture is determined by the strength of the hemolytic substances. Depending upon this there may be shock with hemoglobinuria or merely a variation in temperature, possibly associated with icterus.

Because of the difficulty of recognizing borderline cases, the microscopic agglutination test will not excite unsuitable donors with certainty. The best method of preventing shock from transfusion is if the patient's condition will permit the postponement of the transfusion for two or three hours, as the test tube examination for hemolysis. TROSKER (2).

Sperstein, D. M. Intraperitoneal Transfusion with Citrated Blood. A Clinical Study. *Am J Dis Child* 19: 3, xiv, 20.

The author reports five cases of transfusion of citrated blood into the peritoneal cavity of infants. The favorable results were similar to those following transfusion by other methods. No unfavorable results were noted.

In one patient who died three days after the injection of 100 ccm into the peritoneal cavity 30 ccm of blood were still present, but there were no clots or adhesions. SCHWARTZ, L. KOCOR, M.D.

Ten Broeck, C., and Bauer, J. H. Studies on the Relation of Tetanus Bacilli in the Digestive Tract to Tetanus Antitoxin in the Blood. *J. Exper. Med.* 9: 3, xxxiv, 479.

The sera of twenty-six persons with tetanus bacilli in the digestive tract were found to contain appreciable amounts of antitoxin.

The sera of thirty persons in whose stools no tetanus-like organisms were discovered were, with a few exceptions, free from tetanus antitoxin.

Although the authors have been unable accurately to measure the antitoxin content of these human carriers of tetanus bacilli, they found that 1 ccm of serum neutralizes ten times the minimum lethal dose of toxin and it is evident that the carriers have acquired an active immunity due to the bacilli in the intestinal tract.

These results definitely prove that tetanus bacilli grow in the intestinal tract of man.

Many persons who have no tetanus bacilli in their intestinal tracts and whose serum is free from antitoxin show agglutinins to tetanus bacilli. It is probable that such persons have been carriers of the bacilli in the past and that the agglutinins have persisted longer than the antitoxins. It seems probable therefore that they are potentially immune to tetanus.

If the presence of tetanus bacilli can be established in the digestive tract of man, the means of immunization which might be useful in regions where tetanus infections are common.

SAMUEL HARRIS, M.D.

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Ivy A. C., Orndoff B. H., Jacoby A. and Whitlow J. E. Studies of the Effect of the X-Rays on Glandular Activity *J. Radiol.* 1933, 20

The first part of this article is given over to a general consideration of the biological principles involved when a cell is acted upon by some external influence. A distinction is made between irritation and stimulation. In view of the known action of the roentgen rays, the authors are inclined to skepticism regarding the accuracy of the phrase "stimulative action of the roentgen ray." A critical review of the literature on the subject is summarized as follows:

With the exception of the germinal epithelium of the gonads, glandular epithelium is quite resistant to the effects of the roentgen rays. The literature presents worthy evidence that the glandular activity of some of the glands can be decreased. The dosage of roentgen rays required in each instance has not been accurately determined. As to the stimulation of glandular activity by small doses of roentgen rays, the literature suggests the possibility of such stimulation but it has not yet been demonstrated in a single instance.

The second part of the article deals with the experimental work done to obtain additional information. The submandibular glands of dogs were irradiated for variable periods under different conditions and the results carefully checked by controls. The experiments are classified as acute and chronic, the acute lasting from three to six hours, and the chronic from one to nine months. The methods used in the acute experiments have been described in detail in previous paper. The chronic experiments were performed on dogs with a fistula of Wharton's duct. The technique used is described in detail and the results are tabulated. The conclusions arrived at are given in the following summary:

In acute experiments it was impossible to demonstrate that small doses of the roentgen rays stimulated or sensitized the submandibular gland. The results show that large doses of the roentgen rays in acute experiments caused an immediate depression of the secretory activity of the gland which may be explained by an altered blood flow through the gland.

In dogs with fistula of Wharton's duct it was impossible to demonstrate that small doses of roentgen rays stimulated or sensitized the submandibular gland. Large doses did not cause an immediate depression of the secretory activity of the gland, but differential depression in secretory activity occurred which was first manifested from ten to fourteen days after the exposure of the gland.

One month after the exposure, the gland manifested depression to all stimuli used. An alteration in the composition of the saliva occurred. Two months after the exposure the secretion remained markedly reduced in quantity but its composition returned to normal. The depression was not due to any general systemic effect of the roentgen ray exposure.

Fistula of the duct of the gland did not alter its secretory activity.

The minimum dose required to produce depression of the secretory activity of the submandibular gland was as follows: 11 k, max 10 ma, 5 cm focal size, distance portal of entry 28 cm, square 2 mm aluminum filter, time forty minutes.

The submandibular gland partially suppressed with atropin was neither stimulated nor sensitized by small doses of roentgen rays.

The immediate effect of large doses of roentgen rays on the histology of the submandibular gland was practically nil.

The delayed histologic changes were quite marked. At fifteen days the gland showed the following changes: (1) infiltration of round cells about the secretory ducts and blood vessels and in the stroma of the gland; (2) reduction in the amount of stored mucus in the cells of the alveoli with evidences of degeneration of some of the gland cells; and (3) proliferation of fibroblasts in the stroma of the gland. No hemorrhages or signs of previous hemorrhage were present. At the end of 6 months the glands were smaller and firmer than those of the normal control, there was less round cell infiltration than in the glands studied at the end of fifteen days, the fibrous tissue stroma was markedly increased in amount and the cells of the alveoli were loaded with stored mucus.

These delayed effects of the roentgen ray on the histology of the gland correspond to the changes in the physiology of the gland, for example the reduction of the viscosity and total solids and the quantity of the secretion during the first month and the return to normal of the composition of the secretion with a prominent reduction in its quantity.

ARONIA HARRIS M.D.

Füßler: Deep X-Ray Therapy. *Arch. Radiol. & Electrophys.* 1933, 271, 544.

The author describes roentgen therapy as practiced at Erlangen by Waite and Seitz, who brought it out of the chaos of experimental attempts to the basis of a founded exact science. The first requirement is the construction of powerful high voltage apparatus and the second the exact measurement of the quantity and quality of the rays. Both of these requirements have been

met and it is now possible to administer pre-determined and consistent biological doses.

A brief explanation of the physics and dosimetry of the roentgen rays is given. Since only hard rays can be used for deep therapy the soft ones are filtered out by zinc and aluminum filters. The influence of scattered or secondary rays arising in the tissue penetrated is an important factor. The percentage depth dose, i.e., the relation of the dose in the depths to the dose on the surface, depends on three factors, dispersion, absorption, and scattering.

The biological requirement for the treatment of neoplasms is the giving of a destructive dose without injuring the adjacent healthy tissue. This is made possible by the variable susceptibility of different cells. To obtain a more exact solution of this problem it was necessary to ascertain the exactitude of the quantity of roentgen rays which is just sufficient to destroy tumor and no more than the normal tissue and the skin can withstand. These measurements were based on the ionizing effects of the roentgen rays. By means of the instrument used for this purpose, the ionoquantimeter, it has now become possible to regulate the apparatus and the dose so that they will all produce a constant quality and quantity of roentgen rays.

Certain measurements on the patient's body are next required. Wintz determined the fixed biological unit dose—the so-called unit skin dose or erythema dose. A dose that, eight days after irradiation, produces slight reddening and four weeks after irradiation a tender but clearly visible burn. This dose as fixed by certain number of minutes of exposure with certain apparatus running under certain conditions and certain tube was standardized as 100. It causes discharge of the ionoquantimeter in certain number of seconds. Thus there is calibration of the ionoquantimeter in relation to the biological effect, and the biological effect of other tubes can be determined by means of the ionoquantimeter. The unit skin dose being standardized as 100 per cent, it was ascertained, for instance, that the cancer destroying dose is about 90 to 100 per cent, the sarcoma dose 70 to 80 per cent, the sterilization dose 35 per cent, etc.

The Erlangen technique is based directly upon the exact data obtained. Its practical application to cancer sterilization in connection with certain gynecological diseases and in the treatment of uterine cancer is described at some length. The necessity for using cross fire to obtain the required depth dose is brought out. When this is not feasible, it may be necessary to resort to the distant field method. Some of the dangers associated with deep roentgen therapy are mentioned and attention is called to the need for adequate preliminary and proper after care of the patient.

Good results can be obtained in all kinds of malignant growths. Whatever the answer to the question whether operable cancers should be treated

with the roentgen rays alone or should be operated upon and treated only prophylactically with the roentgen rays, there is no doubt that in the development of deep X-ray therapy a great advance has been made in the fight against cancer. The length of time it has been in use, however, is still too short to determine whether this new branch of treatment will ultimately replace surgery entirely. The results so far obtained in cases of malignant growths are at least as good as those of surgery and a certain percentage of inoperable cases of malignant growths can be cured by the roentgen rays.

As sarcomata are especially suitable for roentgen treatment, amputation should no longer be done because of this condition. Still better are the results in lymphosarcoma and lymphogranuloma. In the treatment of myomata and chmacteric diseases the results obtained are excellent and the method is safe and painless. Therefore operation should not be performed in cases of myoma unless the tumor affects the region of the bladder and subsequently causes further complications, unless it shows necrosis and infection, or unless it is so large that it threatens the function of the bladder or rectum.

In the last few years in the Gynecological Hospital in Erlangen it has been found that in cases of chronic inflammatory tumors of the adnexa the suppression of the function of the ovaries for two or three years by means of a suitable dose of roentgen rays (a little less than the full castration dose)—as suggested by Wintz—excellent results may be obtained. Other diseases which can be successfully treated with the roentgen rays are tuberculosis of glands, tuberculosis of the peritoneum, and tuberculosis of the joints, especially small joints. In skin diseases which can be successfully treated with the roentgen rays it has been found that the use of hard penetrating rays gives better results than the use of soft rays. Excellent results have been obtained in advanced cases of actinomycosis. The X-ray has been found of value also to suppress the high hyperfunction or to stimulate hyperfunction of glands of internal secretion. In the treatment of Basedow's disease, for instance, two thirds of the unit skin dose to the thyroid and the thymus gives excellent results as regards almost all the typical symptoms.

ADOLPH HARTUNG, M.D.

Hirsch, E. F., and Peterson, A. J. The Blood with Deep Roentgen Ray Therapy: Hydrogen Ion Concentration, Alkali Reserve, Sugar and Non-Protein Nitrogen. *J. Am. Med. Ass.* 9:3, 1922, 505.

As variations in the amount of the non-protein nitrogen constituents and other substances in the blood may occur with roentgen ray treatment the authors made a chemical study of the blood of certain patients treated in the routine way with high voltage roentgen rays in the hope of demonstrating changes which might explain roentgen ray sickness. The urea nitrogen, the total non-protein nitrogen,

the urea, acid, the creatinin, and the sugar in the blood were determined according to the Folin and W. method, the carbon-dioxide combining power of the blood plasma by the *Van Slyke* method, and the hydrogen ion concentration of the whole defibrinated blood by the gas chain method. Blood as taken from the arm can before treatment one to four hours after treatment, and again after about twenty-four hours. The blood samples were drawn into 30 x 35 cm. defibrinating tubes containing glass beads, in such a way that all of the air was displaced and the blood in the closed tubes was defibrinated by shaking. The hydrogen ion determinations were made in a McClelland electrode vessel, the transfer of blood into the vessel being completed without exposure to air.

The results in eight of the fourteen cases studied are given in a table. The results in the others were essentially the same.

These examinations demonstrated no striking or consistent alteration in the urea nitrogen, the total non protein nitrogen, the urea acid, the creatinin, or the sugar concentration in the blood following treatment with the roentgen ray. They showed, however, disturbance of the acid base equilibrium, which is manifested immediately after treatment by an increase in the hydrogen ion concentration and sometimes by a slight lowering of the alkali reserve. After twenty-four hours these relationships are reversed, the hydrogen ion concentration being decreased and the alkali reserve increased. The latter observation agrees with the results obtained by Huxley in rabbits. The mechanism concerned is probably like that of other physiological reactions in which the acid base equilibrium of the body is disturbed and transient acidosis is followed by a over compensating alkali response (alkalosis). In the authors opinion the cause of the sickness following roentgen-ray treatment may be this disturbance of the acid base equilibrium or perhaps some as yet unknown factors associated with it.

ABRAHAM HARTMAN, M.D.

RADIUM

Turner, D. The Use of Radium in the Treatment of Disease. *Brit. M. J.* 9 3, 4, 484.

The principal conditions in which radium has been found beneficial at the Edinburgh Royal Infirmary are malignant disease, epithelioid cancer, splenomedullary leukemia, Hodgkin disease, leucodermia, and sarcoma. The author cites a case of malignant disease confirmed by operation and microscopic study which has remained cured for more than seven years. The patient, a woman 49 years of age who had had a sarcoma for four years and had been subjected to four operations. She was admitted to the Infirmary by Miles on July 5, 1915. As Miles did not consider the case surgical, a dose of 4, 80 mgm hrs of radium was given by external and internal application, and in November, 1915 the dose was repeated externally only. The growth

diminished markedly. At the time the patient entered the hospital, it was a large nodular mass adherent to the left maxilla, projecting into the suborbital region, and interfering with vision. It was movable and considerably smaller. The pathologic diagnosis made following its removal was epithelioid cancer. After the operation prophylactic dose of 4, 80 mgm hrs of radium was given. January 9, 1916, the attending physician wrote that the patient, as well as without any trace of recurrence.

Of malignant affections, rodent ulcer, epithelioma, lymphosarcoma, epithelioid cancer, malignant disease of the cervix, and sarcoma of the nasal passages, and of non malignant conditions, epithelioid cancer, early leucodermia and certain sarcomas are very amenable to radium treatment and sometimes may be actually cured by it. Conditions which can be ameliorated but rarely cured include carcinoma, lymphadenoma, and splenomedullary leukemia.

Small rodent ulcers not affecting the mucous membrane or bone are easily cured with from 500 to 800 mgm hrs of radium filtered through 15 mm of silver. Those located where the skin is near the face, the cheeks, and those of or near the ear are refractory. Small epitheliomas of the lip are very amenable to treatment. Volvement of the floor of the mouth, the tongue, or the larynx is difficult to benefit materially with radium.

Lymphosarcomata are the most susceptible to radium of all new growths, but while they disappear rapidly they tend to recur and form metastases.

In malignant disease of the external genitalia the prognosis of radium treatment is usually unfavorable as recurrence is the rule. The best results are obtained in early malignancy of the cervix. From 6,000 to 10,000 mgm hrs should be given.

The extent of the beneficial effect of the radium is an important question. In postmortem examinations of cervixes treated with radium Bumm found that the cancer cells were destroyed only for a distance of 3 cm from the radiating source. It is suggested that cells beyond this distance may be regarded as inert, that is their power to proliferate may be destroyed. From experiments on mice Wassermann concluded that the ray does not kill the cancer cells but merely destroy their proliferating power.

In epithelioid cancer radiation has been found consistently useful. The author has treated 200 cases with beneficial effect on the general condition and special symptoms. From 500 to 500 mgm hrs of radium radiation screened to prevent injury to the skin should be given over both lobes, the neck and the thorax.

Recurrent scirrhus nodules, even those distant to the bone disappear but recur. Carcinoma of the rectum is refractory. In Hodgkin disease amelioration may be obtained by applying radium over the glands and embedding it. In splenomedullary leukemia the application of radium over the spleen will reduce the splenic enlargement and the white

blood cell count and greatly improve the general condition. Recurrence, which will develop in a few months, will again yield to treatment but each recurrence yields less readily and eventually the patient succumbs.

In the treatment of exophthalmic goiter and nevi in children, the advantages of radium as compared with the X-ray include (1) absolutely constant dosage, (2) greater penetration and (3) quicker effect. ALONSO J. LARSEN, M.D.

Alonso, W. H. B. Radium and Surgery. *Iowa J. Surg.* 93, xxxvi, 89.

Radium is the best single agent for the treatment of epithelioma of the skin without glandular involvement. The prognosis is less favorable in these cases when cartilage or bone is involved. In cases of epithelioma of the lip the results of radium treatment are very gratifying when there is no metastasis in the glands. Because of the tendency to metastasize in such cases the submental and submandibular regions should be heavily irradiated.

In cases of rodent ulcers radium is decidedly preferable to surgery. Mouth cases require the co-operation of the radiologist and surgeon as radium alone does not give the best results. In general the malignant tissue should be removed by surgery and the area then heavily irradiated.

The treatment of non-malignant conditions of the skin should be undertaken by the radiologist with great care but the results given by radium are usually preferable to those of operation. The use of radium for the treatment of keloids cannot be too strongly urged. Angiomata, warts and moles yield well to radium. Radium is also valuable for lupus erythematosus, psoriasis, eczema, and tuberculous ulcers.

Sarcomata are difficult to handle the best. Radium is satisfactory in the treatment of skin sarcomata, angiosarcoma, sarcoma of the conjunctiva and epibulb. Its results in lymphosarcoma are uncertain. The author asks for careful consideration of its use for bone sarcoma and cites cases in which long-standing cure was obtained by this means when radical surgery had been urged.

For malignant breast conditions surgery is preferable to radium, but the author urges pre-operative irradiation of the lymphatics and states that after operation the operative area, the axilla, and the entire lymphatic area should be rayed as soon as possible and each six weeks thereafter. Recurrent nodules and chronic mastitis yield well to radium.

In cases of uterine fibroids radium is of undoubted value and should always be used in uncomplicated cases when the woman is over 4 years of age and the fibroid is smaller than five months pregnancy. In the cases of younger women and in cases of fibroids larger than five months pregnancy it is contra-indicated. It is contra-indicated also for subserous and submucous fibroids and in cases with pelvic infection or inflammation.

Radium is specific in menorrhagia and metrorrhagia due to benign conditions. In malignancy of the fundus of the uterus hysterectomy should be performed. In inoperable cases radium should be used for palliation. There is considerable diversity of opinion as to the best procedure in inoperable and borderline cases of cervical cancer. The author advises radium in borderline cases but does not express an opinion regarding operable cases.

Rectal carcinoma may be treated by operation with postoperative irradiation. Radium is used successfully for bladder tumors, especially papillomata. The hypertrophied prostate shows marked retrogression under the action of radium rays. With regard to cancer of the prostate the relative value of operation and radium is still undetermined. In cases of toxic and exophthalmic goiter radium is preferable to surgery. In Hodgkin disease it is very beneficial. Burnham reports permanent cures in myelogenous leukemia; radium holds the disease in check and renders the patient much more comfortable. The author urges the use of radium also for the treatment of tuberculous adenitis.

ALONSO J. LARSEN, M.D.

MISCELLANEOUS

Roh, H. Further Indications for Intensive Heliotherapy (Weitere Indikationen zur Hochdosen-entherapie). *Straahlentherapie* 9, 2175.

Several cases of sciatica and acute neuralgia were subjected to intensive heliotherapy. The first treatment lasted for three minutes and the others five, eight and twelve minutes. In the majority of the cases the result was good.

The advantages of heliotherapy are that absolute immobilization of the limb is not necessary, the patient is not obliged to stop work, and the administration of analgesics is rendered unnecessary.

The author interprets neuralgia as an infection caused by bacteria already present in the body. Chilling of the body plays a part in its etiology by creating an area of lessened resistance. A similar etiology explains series of diseases which are manifested by rheumatic pain occurring particularly under the influence of changes in the weather, months and years after an injury. This theory led the author to subject to heliotherapy cases of contusion, joint effusions, luxations, and lacerations in which the condition was not chronic. In these cases also the results were good. Diseases of the joint capsules, ligaments, muscles and tendons were cured completely in a short time and did not recur. Diseases of the synovium associated with only light changes of the joint surfaces healed well and without recurrence after eight irradiations. In cases in which destruction of joint surfaces was diagnosed, only alleviation of pain was obtained.

After the first irradiations the pain was alleviated or ceased altogether. After from four to eight irradiations the disease was generally completely

of chronic half mortality lesion in the skin associated with atypical epithelial proliferation.

The occurrence at about the same time of extensive degenerative changes in the dermis accompanied by an atypical growth of hair follicles with the production of diffuse and nodular areas of thickening and induration.

3 The development of a growth in the skin of the left scrotum which recurred after removal, spread diffusely over adjacent part of the leg and metastasized to the regional lymph nodes and internal organs.

4 The transplantation of the growth to other rabbits by intratesticular inoculation and the successful propagation of the growth over a period of nearly 3 years (10 generations).

5 The development of a cachectic condition of pressure phenomena from metastases in the cervical and lumbar regions of the spinal column, which eventually led to the death of the animal.

6 The character postmortem, of an extensive leucoplakia of the tongue and buccal mucosa chronic inflammatory lesions in the oropharynx, atypical epithelial proliferation and nodular growth in the left testicle differing in character from that in the scrotum.

7 The presence of extensive hyperplastic changes in the vascular system, degeneration of the parathyroid glands, atrophy of the thymus and lymphoid system associated with chronic hyperplasia, atrophy degeneration and necrosis of the suprarenals, and atrophy and hyperplasia of the thyroid with chronic thyroiditis.

The authors reach the conclusion that the growth in the scrotum was neoplasm of epithelial origin composed of cells allied to those found in the bulb and root sheath of the hair.

(Quoted by BRUNY M D)

Sughrue, K., and Benedict, S. R. The Influence of Inorganic Salts upon Tumor Growth in Albino Rats. *J. Cancer Research* 9 2, 329.

The authors studied the influence of thirty inorganic salts on the L-leucine Jobling rat carcinomas. The salts are given orally.

Copper sulphate, mercuric trioxide, potassium carbonate and calcium chloride had retarding influence upon the growth of the tumor but this is not marked. Copper sulphate the most effective agent, appeared to have an immunizing action.

Tellurium trioxide and selenic acid were found to have a very marked toxic effect upon rats but no influence whatever upon the proliferating power of the tumor cells.

Magnesium carbonate and magnesium chloride had a slight accelerating influence upon the tumor growth. (J. M. C. ROBERTSON, M D)

Wood, F. C. Recent Cancer Therapy. *Cancer* 11, 111-124, 1924.

The greatly increased interest in the treatment of cancer is due not entirely to the fact that the record-

ed frequency of the disease shows a marked increase. The dramatic circumstances of the discovery of radium and the extraordinary phenomena which accompany its biological action on the tumor have made the subject of interest to the commercial dealer and the newspapers who feature all the spectacular results and fail to publish the fatalities.

The radium enthusiasm has now about run its course. The price has fallen more than threefold primarily because of a buyers strike. Physicians do not care to invest a large sum of money in substance of such limited capacity. The dermatologist, however, still shows a need of moderate quantity of radium to treat venous benign superficial tumors of the basal cell type and the gynecologist will also require it to treat inoperable carcinoma of the cervix. We should not allow the high optimism to be replaced by an extreme pessimism for although radium may not cure many cancers it is a valuable adjunct to surgery and a useful palliative in inoperable cancer.

The waning of enthusiasm for radium therapy has been followed by great interest in the so-called deep X-ray generated by machines delivering currents in excess of 200,000 volts. This also is of value but does not cure the deeper primary growths. Publicity has resulted in a very unfortunate situation as persons with operable growths often insist that radium or X-ray treatment be given and many are now refusing to submit to surgery even when told that the result of radiation are far less certain than those of complete removal.

While radium may be used as palliative measure in certain inoperable cancers, it should never be employed exclusively in cases in which tumors in blood vessels and vital organs and there is advanced cachexia, these it will hasten death. Only very small doses may be given to relieve pain and improve the mental state.

Cancer of the stomach is the most unsatisfactory field for radiation. The author believes that in borderline case gastro-enterostomy is a better alternative. The close proximity of important organs renders efficient roving impossible and therefore any radiation only hastens death.

In cancer of the breast the best treatment is the most extensive operation possible followed by very heavy roving given for year or two increasing intervals. The author has never seen a recurrence after such treatment. When the sternum or ribs are involved the problem is difficult. Metastatic metastases are incurable.

Cases of bladder and prostatic carcinoma are inoperable or borderline cases. If the surgeon is extremely skillful he may be able to cure 5 per cent of them. If the others bear radiation with the X-rays gives some relief. If there is obstruction suprapubic cystostomy should be done as much of the tumor removed as possible and radium needles inserted into the base. In certain cases of carcinoma of the prostate without obstruction repeated radiation without opening of the bladder may give palliation.

Borderline and inoperable cases of cancer of the oral cavity are best treated with radium needles. In operable cases the primary growth and the submental and cervical lymph nodes should be removed. Many inoperable cases have been treated with an overdose of radium or X ray. It is better to give a dose only sufficient to cause shrinkage and then to remove the cervical lymph nodes.

In bone sarcomata the pathologist has thus far been unable to determine the degree of malignancy of the different types of growths and until this is determined there will be much uncertainty. If these cases cannot be cured by surgery they cannot be cured by radiation, for osteosarcomata and chondrosarcomata are so highly resistant to radiation that they are as often stimulated as inhibited by large quantities of injected radium or intense high voltage X ray treatment.

In pre-operative raying of operable cases the operation must be done within forty-eight hours after the raying and the skin over the radiated area must be excised.

Pigmented moles should never be treated with radium, the X ray caustics, freezing agents, or the cautery but should be widely excised.

In carcinoma of the cervix of the uterus radiation may well compete with surgery. Astonishing palliative effects are obtained, and a few advanced cases have been free from recurrence for four or five years after radium treatment. Only one large dose should be given. Carcinomata of the body of the uterus should always be treated by hysterectomy. The tumors are of low grade malignancy forming metastases late and the results of operation are extremely good.

The only other condition in which radium can compete with surgery is the basal cell tumor of the skin. Such tumors yield to erythema doses and most of them can be cured by single treatment with either the X ray or radium. Recurrences, however, are very resistant to this treatment.

In summarizing the author makes the following statements:

Operate upon all operable malignant growths. An inoperable carcinoma should be treated with radium if it is small and fairly well localized, but if it is extensive, it should be treated with the X ray. Even if radium and the X ray never effected a cure their use would be justifiable on account of the palliation they often give, which exceeds that obtained by any other known method. PAUL W. SWART, M.D.

Semprún. The Future Surgery of Cancer (*La futura cirugía del cáncer*). *Revista de cirugía* 9 475

A study of the cancer cell shows that it is characterized by high content of glycogen. Cancer can be treated in the same way as rabies without the discovery of the true nature of the virus. Semprún found that, *in vitro*, a basic quinine salt to which eosin is added is inert toward virulent emulsion of cancerous tissue but active when it has been exposed for two hours to the radiations of a mercury quartz lamp. If a cancerous emulsion serum to which has been added quinine eosin solution that has not been exposed to the mercury quartz rays is injected into animals, positive results are obtained in 48 per cent, but when the quinine solution is exposed to the rays the positive results after injection are reduced to from 3 to 16 per cent. Semprún discusses the causes of this immunity and the prophylactic value of serum therapy in certain clinical cases.

With regard to the surgical treatment of cancer Semprún states that before operation the patient should be subjected to preliminary treatment with injections of radiated serum until there is improvement in his general condition, and that the instruments and suture materials used at operation should also have been exposed to the rays of the mercury quartz lamp. After completion of the operation the operative field should be exposed for fifteen minutes to direct radiations of the mercury lamp placed at a distance of 40 cm. and moved at intervals so that all parts will be well irradiated. After this exposure the wound may be sutured. W. A. BARNARD.

cured. The author speaks of a pain dose and a curative dose, the latter amounting to three or four times the former. *Ill. xv (7)*

Kollischer G and Katz, H. Surgical Diathermy in Its Relation to Radiotherapy. *J. Radiol.* 1931 76.

The author gives a brief description of surgical diathermy and compares its technical and clinical advantages with those of the Paquelin cautery, the soldering iron, and the galvanocautery. The indications for surgical diathermy expanded with development of the technique and improvement in the results. Soon the fact became apparent that electrocoagulation of malignant tumors should be done in conjunction with radiotherapy as the therapeutic results were better if the raying was applied to hyperemized structures. A favorite method of producing hyperemia is the employment of medical diathermy which attracts the blood to the structures by heating them moderately but thoroughly with the high frequency current.

A series of cervical and uterine cancers demonstrated that surgical diathermy is the most efficient method of improving the healing effect of radiotherapy. After disagreeable experiences with total coagulation of the tumor mass in cases of extensive uterine, cervical and prostatic cancer only limited coagulation was done and this was followed up by raying either with radio-active substances or with the roentgen tube. In the course of further observations it was noticed that raying applied soon after electrocoagulation seemed to give better results than radiotherapy administered some time later.

It therefore has become routine to coagulate malignant tumors only to a limited extent and to administer the therapeutic rays within forty-eight hours. In this way very satisfactory results have

been obtained, even in apparently hopeless conditions a clinical cure has been effected. The term clinical cure is chosen for these cases because the case of uterine cancer treated earliest was treated only six years ago and the case of cervical cancer treated earliest was treated only three years ago.

Investigation of the immediate results of surgical diathermy demonstrated that beyond the zone of necrosis and sealing of the lymphatics it creates some of pronounced reaction, an area of aseptic inflammation characterized by the appearance of numerous round cells, leucocytes, and fibroblasts. All these are cells of high vitalistic function. It was found also that the cells composing the fibrous tissue become emigrated, this being evident from the fact that they accept vital staining. It is fair to assume therefore, that cancer cells lying in this perithermic zone also become emigrated and that under this increased vital potency they may produce materials which if brought into the circulation, may stimulate the endocrine glands to the production of defensive and protective ferments. These biological considerations together with the clinical observations, suggest that only the decayed and decaying malignant cells should be destroyed by surgical diathermy, the malignant cells which are still at the peak of their periodicity of life being left to the influence of radiotherapy.

The conclusions drawn are summarized as follows: Surgical diathermy is a potent factor enhancing the efficiency of radiotherapy.

Electrocoagulation and raying seem to furnish the possibilities of a true chemotherapy of malignant tumors.

Raying must be administered while the perithermic zone shows pronounced reaction.

WILLIAM H. HARRIS, M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Dubreuilh, W. The Treatment of Leprosy (Traitement de la lèpre) *J. de méd. de Bordeaux* 9 3 xcv
5

We know that leprosy is contagious but not how the contagion is carried. Inoculations have been negative and in spite of the research of Ehlers, Marchoux, and Bourret, intermediate host for the transmission of the disease has been found. In Norway following isolation of those affected by the disease, the number of lepers fell from 338 in 1856 to 30 in 1909. Ambulatory cases are carefully watched in order that they may not spread the disease.

In Hawaii every leper is sent to the hospital at Kalaheo where he is treated, apparently cured, and then freed on condition that he will return at regular intervals for examination. Progressing cases are sent to the leper's colony at Molokai where they do given work and the usual distractions of village life. Wives and husbands are permitted to live together but when children are born in the colony they are taken away as soon as possible and raised elsewhere. Leprosy is not necessarily fatal even advanced cases may become cured. Such cures are usually spontaneous.

Foremost among the agents which have been used in medical treatment are vaccines and sera. Scholtz and Klingmüller excised leprosy lesions, expressed pus from them, and inoculated this pus into those suffering from the disease. Woolley sterilized this pus first. From leprosy tissue which has been dried, triturated with sand, filtered, and sterilized an emulsion has been made for hypodermic injection. Williams, in 1900, claimed one cure from such injections, but Castellani and Little stated that the patient was not cured and that the method had failed in their hands fifteen years previously.

The bacillus of leprosy has been sought but cultures from an acid fast bacillus sometimes found in the tissues have failed to give a cure. Roast leproline is the glycine extract of such cultures. Drycke's nastine is an ether extract. Both of these have failed, as have tuberculin, bovine serum, snake venom, mercury, carbolic acid, arsenobenzol, and potassium iodide. Amino arsenophenol has given some promise of success. In the Orient, chaulmoogra oil, soft, yellowish solid, has been used as a cure for leprosy for several centuries. The dose tolerated is variable, ranging from 1 to 200 drops. The purified oil may be used for subcutaneous or intramuscular injection. It has also been given intravenously but the danger of pulmonary fat embolism must be considered. Especially dangerous are in-

jections of mixtures of the oil and ether. Ethyl-ether extracts of chaulmoogra acid are now considered best. These are injected into the gluteal muscles once a week, the dose being gradually increased from 1 to 50 cc. and the treatment continued for months or years, even after the cure seems complete. The area injected is painful for two or three days.

KILLGUS SEYMOUR M.D.

Westmann, S. Diabetic Gangrene and Its Treatment (Die diabetische Gangrän und ihre Behandlung) *Ztschr. f. aenstl. Fortbild.* 9 3 xx, 37

After it was decided that in cases of associated gangrene and diabetes, the diabetes was the primary factor the question arose as to how gangrene developed in the absence of a skin lesion and without the entrance of pyogenic bacteria into the blood. Whether it develops as the result of faulty diffusion between the tissues and the blood or whether it is due to arterial thrombosis (most of the subjects being old persons with arteriosclerosis) has not yet been determined.

In light cases of diabetic gangrene good results may be obtained by diet and the delay of other treatment until demarcation occurs. If the patient is already septicemic little hope remains. Because of the better results which were obtained from wide opening of diabetic carbuncles more active treatment is now recommended for diabetic gangrene of the lower extremities. The site of operation depends upon the state of the arteries. If the foot arteries are still palpable, incisions extending to the sound tissue and excision of the gangrenous tissue may be sufficient. Otherwise amputation is indicated. Its site depends on the extension of the gangrene and the patency of the arteries above.

The prognosis is unfavorable when inflammation extends along the veins and lymphatics of the thigh, and when acetonaemia and coma are present, but even under such conditions, strict diet—starvation treatment especially—and the administration of large quantities of alkali by mouth, by rectum, and intravenously in conjunction with surgery may be beneficial. Two such cases are reported. RIESE (2).

Brown, W. H. and Pearce, L. Studies Based on Malignant Tumor of the Rabbit. I. The Spontaneous Tumor and Associated Abnormalities *J. Exper. Med.* 9 3, xxxiv, 60

The following is a summary of the most important findings made by the authors in a study of the development of malignant tumor at the site of a primary syphilitic lesion in the scrotum of rabbit about four years after inoculation.

A mild but persistent syphilitic infection with an occasional relapse and the eventual development

of chronic inflammatory lesions in the skin associated with atypical epithelial proliferation.

2. The occurrence at about the same time, of extensive degenerative changes in the dermis accompanied by an atypical growth of hair follicles with the production of diffuse and nodular areas of thickening and induration.

3. The development of growth in the skin of the left scrotum which recurred after removal spread diffusely over adjacent parts of the skin, and metastasized to the regional lymph nodes and internal organs.

4. The transplantation of the growth to other rabbits by intratesticular inoculation and the successful propagation of the growth over a period of nearly 1 year (twenty generations).

5. The development of cachexia and of pressure phenomena from metastases involving the cervical and lumbar regions of the spinal column, which eventually led to the death of the animal.

6. The discovery postmortem of an extensive leukoplakia of the tongue and buccal mucosa, chronic inflammatory lesions in the esophagus with atypical epithelial proliferation and a nodular growth in the left testicle differing in character from that in the scrotum.

7. The presence of extensive degenerative changes in the vascular system, degeneration of the parenchymatous organs, atrophy of the thymus and lymphoid system associated with chronic lymphadenitis, atrophy, degeneration and necrosis of the suprarenals, and atrophy and hyperplasia of the thyroid with chronic thyroiditis.

The authors reach the conclusion that the growth in the scrotum was neoplasm of epithelial origin composed of cells allied to those found in the bulb and root sheath of the hair.

OSWALD E. BIRLEY, M.D.

Sughrue K., and Benedict, S. R. The Influence of Inorganic Salts upon Tumor Growth in Albino Rats. *J. Cancer Research* 9, 379.

The authors studied the influence of thirty inorganic salts on the Flexner-Jobling rat carcinoma. The salts were given orally.

Copper sulphate, mercuric bromide, potassium carbonate and calcium chloride had a retarding influence upon the growth of the tumor but this was not marked. Copper sulphate the most effective agent, appeared to have an immunizing action.

Tellurium nitrate and selenic acid were found to have a very marked toxic effect upon rats, but no influence whatever upon the proliferating power of the tumor cells.

Magnesium carbonate and magnesium chloride had a slight accelerating influence upon the tumor growth.

ERRIC C. ROBERTSON, M.D.

Wood, F. C. Recent Cancer Therapy. *Canada M. Ass. J.* 933, 231-5.

The greatly increased interest in the treatment of cancer is due not entirely to the fact that the record

of frequency of the disease shows a marked increase. The dramatic circumstances of the discovery of radium and the extraordinary phenomena which accompany its biological action on the tissues have made the subject of interest to the commercial dealer and the newspapers. No feature of the spectacular results and fatal catastrophes.

The radium enthusiasm has now about run its course. The price has fallen more than threefold, primarily because of a buyers' strike. Physicians do not invest a large sum of money in a substance of such limited capacity. The dermatologist however will always have need of moderate quantities of radium to treat semi-benign superficial tumors of the basal cell type, and the gynecologist will also require it to treat inoperable carcinoma of the cervix. We should not allow the high optimism to be replaced by an extreme pessimism for although radium may not cure many cancers, it is valuable adjunct to surgery and a useful palliative in inoperable cancer.

The waning of enthusiasm for radium therapy has been followed by great interest in the so-called deep X-ray generated by machines delivering currents in excess of 500,000 volts. This also is of value but does not cure the deeper primary growths. Publicity has resulted in every unfortunate situation as persons with operable growths often insist that radium or X-ray treatment be given and many are now refusing to submit to surgery even when told that the results of radiation are less certain than those of complete removal.

While radium may be used as a palliative measure in certain inoperable cancers, it should never be employed extensively in cases in which tumors involve blood vessels and vital organs and there is advanced cachexia in these it will hasten death. Only very small doses may be given to relieve pain and improve the mental state.

Cancer of the stomach is the most unsatisfactory field for radiation. The author believes that in borderline case gastro-enterostomy is far better than radiation. The close proximity of important organs renders effective raying impossible and therefore any radiation only hastens death.

In cancer of the breast the best treatment is the most extensive operation possible followed by very heavy raying given for year or 1 at increasing intervals. The author has never seen a skin recurrence after such treatment. When the sternum or ribs are involved the problem is difficult. Mediastinal metastases are incurable.

Cases of bladder and prostate carcinoma are inoperable or borderline cases. If the surgeon is extremely skillful he may be able to cure 50 per cent of them. If the others have radiation with the X-ray gives some relief. If there is obstruction suprapubic cystostomy should be done as much of the tumor removed as possible and radium needles inserted into the base. In certain cases of carcinoma of the prostate about obstruction repeated radiation about opening of the bladder may give palliation.

Borderline and inoperable cases of cancer of the oral cavity are best treated with radium needles. In operable cases the primary growth and the submental and cervical lymph nodes should be removed. Many inoperable cases have been treated with an overdose of radium or X-ray. It is better to give a dose only sufficient to cause shrinkage and then to remove the cervical lymph nodes.

In bone sarcoma the pathologist has thus far been unable to determine the degree of malignancy of the different types of growths and until this is determined there will be much uncertainty. If these cases cannot be cured by surgery they cannot be cured by radiation for osteosarcoma and chondrosarcoma are so highly resistant to radiation that they are as often stimulated as inhibited by large quantities of inserted radium or intense high voltage X-ray treatment.

In pre-operative raying of operable cases the operation must be done within forty-eight hours after the raying and the skin over the radiated area must be excised.

Pigmented moles should never be treated with radium, the X-ray caustics, freezing agents, or the cautery, but should be widely excised.

In carcinoma of the cervix of the uterus radiation may well compete with surgery. Asthenizing palliative effects are obtained, and few advanced cases have been free from recurrence for four or five years after radium treatment. Only one large dose should be given. Carcinoma of the body of the uterus should always be treated by hysterectomy. The tumors are of low-grade malignancy, forming metastases late, and the results of operation are extremely good.

The only other condition in which radium can compete with surgery is the basal-cell tumor of the skin. Such tumors yield to erythema doses and most of them can be cured by single treatment with either the X-ray or radium. Recurrences however are very resistant to this treatment.

In summarizing the author makes the following statements:

Operate upon all operable malignant growths. An inoperable carcinoma should be treated with radium if it is small and fairly well localized, but if it is extensive, it should be treated with the X-ray. Even if radium and the X-ray never effected a cure their use would be justifiable on account of the palliation they often give, which exceeds that obtained by any other known method. P. UL. W. SWICK, M.D.

Semperin. The Future Surgery of Cancer (La futura cirugía del cáncer). *Revista de cirugía* 9, 475.

A study of the cancer cell shows that it is characterized by a high content of glycogen. Cancer can be treated in the same way as rabies without the discovery of the true nature of the virus. Semperin found that, like a basic quinone salt, which eosin is added is inert toward virulent emulsion of cancerous tissue but active when it has been exposed for two hours to the radiations of a mercury quartz lamp. If a cancerous emulsion or serum to which has been added quinone eosin solution that has not been exposed to the mercury quartz rays is injected into animals, positive results are obtained in 48 per cent, but when the quinone solution is exposed to the rays the positive results after injection are reduced to from 8 to 26 per cent. Semperin discusses the causes of this immunity and the prophylactic value of serum therapy in certain clinical cases.

With regard to the surgical treatment of cancer Semperin states that before operation the patient should be subjected to preliminary treatment with injections of radiated serum until there is improvement in his general condition, and that the instruments and suture materials used in operation should also have been exposed to the rays of the mercury quartz lamp. After completion of the operation the operative field should be exposed for fifteen minutes to direct radiations of the mercury lamp placed at a distance of 40 cm. and moved at intervals so that all parts will be well irradiated. After this exposure the wound may be sutured. W. A. BRIDGMAN.

BIBLIOGRAPHY of CURRENT LITERATURE

NOTE.—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THE ISSUE IN WHICH AN ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

SURGERY OF THE HEAD AND NECK

Head

The treatment of cranial injuries D W BULLOCK, E S BULLOCK, and R H DAVIS South M & S 923, 1899 3 6

The diagnosis and treatment of fractures of the base of the skull thirty-two cases. O FERRY Rev de chir. 19 3, 218 7 [289]

Syphilitic osteitis of the cranium. C. LACROIX Bull et mém Soc de chir de Par 19 3, 212, 79

Subperiosteal temporal abscess without suppuration F BENOIST Arch Internat de laryngol, etc Par 19 3, 212, 454

Sarcosis of the cranium. O L. HARTNA KAPPEL Bull et mém Soc anat de Par 923, 202, 54

Pithechothrombosis of the intracranial sinuses C C CH. RITON Ann Otol Rhinol & Laryngol 19 3, 222, 481

Brain thrombosis H F OWEN J Michigan State M Soc 923, 224, 76

Sinus thrombosis, facial paralysis on the opposite side, double choked disk recovery W C BOWMAN Laryngoscope 923, 222, 460

A case of sinus thrombosis with meningeal symptoms A N SCHELLER Laryngoscope, 923, 222, 453

Sinus thrombosis following pneumonia in an adult E W HUBERT Brit M J 1, 929

Recurrent unilateral luxation of the lower jaw following alcohol injection for trigeminal neuralgia, recovery after resection of the neuremas A. COHEN and J. MICHAEL Bull et mém Soc de chir de Par 923, 212, 639

Pathogenic study of tumors of the jaw DYLAND and BECKER Presse méd Par, 9 3, 222, 139

Tumors of the jaw from the standpoint of the rhinologist J D WATTHAM Ann Otol Rhinol & Laryngol 19 3, 222, 474

Hemorrhagic angiosarcoma of the upper jaw H J RANKIN DAVIS Proc Roy Soc Med Lond 1923, XVI, Sect Laryngol 49

Symmetrical dermoidic cysts of the inferior maxilla A. RICHARD and C. DUBREY Lyon chir 923, 22, 27

Simple cyst of the mandible C R. MOORE Internat J Orthodont Oral Surg & Radiography 923, 22, 466

Unilocular adamantinoma cyst of the ascending ramus of the mandible F S. TY and C. DUBREY Lyon chir 9 3, 22, 29

Mixed submandibular tumor H. MONOD and L. ANDRÉOLLE Bull et mém Soc anat de Par 9 3, 222, 564

Plastic repair of the face and neck J J M. BEE & Edinburgh M J 923, 22, 222, T Med Chir Soc Edinburgh

Plastic surgery of the face S. OELBER Internat J Surg 923, 222, 56

Parotitis with chronic retention of saliva, Leriche operation G. LECLESC Bull et mém Soc de chir de Par 9 3, 212, 73

Salivary calculus S C H. YS J South Carolina M Ass 9 3, 222, 59

Mikuloz disease F I BARTLE Surg Clin N Am 19 3, 24, 83

Ey

The relations between the eye and ear J VA. DEZ HOEVE Ann Otol Rhinol & Laryngol 9 3, 222, 57

The determination of the static position of the eye E A. CARRICO Rev méd d Rome, 9 3, 222, 79

Ninety ystagnosis A S. PERCIVAL Brit M J 923, 4, 757

Industrial eye injuries F. ALLPORT N York M J & Med Rec 923, 222, 733

An unusual foreign body in the eye W D. DRAKE Illinois M J 923, 222, 465

The electrocatalyst in the extraction of metallic particles from the eye A. V. LOTT Bruxelles méd 923, 22, 746

Some congenital anomalies of the eye and their confusion with acquired conditions I C. MAYN Lancet, 923, 222, 743 [289]

Cycloplegics in refraction work A E. BELSON, J Indiana State M Ass 9 3, 222, 68

The astigmatism of the macula and the size and shape of the color fields C E. FERRALL and G. RAYD Am J Ophth 9 3, 222, 453

The third dimension in monocular vision C H. BRYAN Brit J Ophth 923, 222, 27

The method of considerations in the examination and interpretation of binocular diplopia MANOYER J de méd de Bordeaux, 923, 222, 405

Visual changes due to anisometropia—report of two cases W R. PARKER J Michigan State M Soc 9 3, 222, 77 [210]

Lepus vulgaris with ocular extension W S. FRANKLIN and F C. COOPER Am J Ophth 9 3, 222, 573

Examination in ocular therapeutics G. BOURGEOIS, A C. TROVAT and M. JOLYOT Presse méd Par 923, 222, 57

The new antiseptic preparations of bismuth in ocular therapy M M. ASA Sudo méd 19 3, 222, 353

Chelation technique H. GIFFORD Am J Ophth 19 3, 222, 457

Convergent squint in children J W. IRELL Rhode Island M J 923, 222, 90

Fundamental considerations in the correction of squint A. WATTHAM Arch Ophth 9 3, 222, 24 [211]

A watertight suture in trephining R F. MOORE Brit J Ophth 9 3, 222, 57

- A cavernous angioma of the orbit G MARCHIA [311]
 Rev méd. de Séville, 1923, xlii, 86
- Tuberculosis of the orbital cavity Literature D ROY [311]
 Arch Ophth 923, hi, 147
- A papillary epithelial tumor of the orbit C C. SALT
 Ann J Ophth 923, 38, vi, 473
- Endothelioma of the orbit T A WILLIAMSON NOBLE [311]
 Brit J Ophth 923, vi, 22
- A case of ivory like osteoma originating from the os
 planum and involving the orbit H H VAIL Laryngoscope, 9
 3, xxxii, 428
- Ethmoido-orbital metastases of silent hypernephroma
 V DUYR and MARRAS Arch internat de laryngol
 etc Par 923, xxxi, 35
- Method of action of subconjunctival injections A
 VAN LINT Bruchius-méd, 923, iii, 87
- The treatment of conical cornea C KILLICK Brit J
 Ophth 923, vi, 264 [312]
- A review of keratoplastic surgery and some experiments
 in keratoplasty A E FORSTER Am J Ophth 923, 38
 vi, 366 [312]
- Interstitial keratitis due to focal infection C P JONES
 Am J Ophth 923, 38, vi, 46 [312]
- Primary ring sarcoma of the iris T M LI Am J
 Ophth 923, 38, vi, 545 [312]
- Spontaneous rupture of the eyeball W W GUSTILAV
 Am J Ophth 923, 38, vi, 488
- Rupture of the choroid H D LANE Am J Ophth
 923, 38, vi, 440
- Steel splinter penetrating the lens without cataract
 G H CROSS Am J Ophth 923, 38, vi, 487
- Anterior subluxation of the lens without trauma M C
 LORENZ Am J Ophth 923, 38, vi, 488
- Pseudophthemia, vascular tumor of the lens S R GERRARD
 and J S LARZA Am J Ophth 923, 38, vi, 505
- Blood cataract R P RAYMAKER Brit J Ophth 923,
 vi, 360
- Clinical observations following the use of cyanide of
 mercury in lenticular opacities J H BURLINSON South
 W J 923, xvi, 486
- Cataract extraction and complications W F HOBBS
 J Indiana State M Ass, 1923, xvi, 70 [312]
- The treatment of early opacities in the senile lens, with
 demonstration of six cases W B I FULLACK Glasgow
 M J 923, xvii, 3 [312]
- On ocular perception in advanced cataract G YOUNG
 Brit J Ophth 923, vi, 67 [312]
- Pyophtis with focal infection L F APPLEMAN Am J
 Ophth 923, 38, vi, 563
- Keratitis associated with disease of the cardiovascular
 system W L BRIDGES N York M J & Med Rec
 923, xvii, 74
- Discussion on the significance of the vascular and other
 changes in the retina in arteriosclerosis and renal disease
 G A PITT H B SKAW, R F MOORE, P BARNES
 P ADVANCE and others Proc Roy Soc Med Lond,
 923, xvi, Sect Med & Ophth [312]
- Familial retino-cerebral degeneration W H NAKOPF
 and R S CRYSTOCHIAN Am J Ophth 923, 38, vi,
 476
- A serous-epithelioma of the retina J A
 MOONAN Am J Ophth 923, 38, vi, 484
- Optic neuritis of sphenoidal sinus origin operation cure
 S C THORNDYKE Brit M J 923, 4, 95
- Monocular optic neuritis L BOGIANA Brit J
 Ophth 923, 38, vi, 70 [314]
- Herpes zoster ophthalmicus S LODGE and W O
 LOWE Brit M J 923, 4, 104
- T cases of tumor of the optic nerve H NEAME
 Brit J Ophth 923, 38, vi, 509 [314]
- The otolaryngological clinics of Vienna of today A L
 STORER Ohio State M J 923, xxx, 44
- Problems after removal of the auricle for carcinoma
 R A DIXON and I M LUTTON Northwest Med 923
 xxx, 5
- Impaired hearing B H SHUSTER Therap Gas
 923, 38, xxxii, 389
- The effect of pressure changes in the external auditory
 canal on the acuity of hearing A G POSTMAN and F W
 KEANE Ann Otol Rhinol & Laryngol 923, xxxii, 445
 [314]
- A note on boiler makers' deafness R LARK J Laryn
 gol & Otol 923, xxxiii, 373
- A new ear and nasal syringe W R MARSH J Am
 M Ass 923, lxxx, 1660
- T cases of tympanic perichondritis S CRILL Arch
 internat de laryngol, etc Par 923, xxxi, 90
- The structure and function of the crista ampullaris
 G E SHAMBERG Ann Otol Rhinol & Laryngol,
 923, xxxii, 443 [315]
- The practical diagnostic value of tests of the vestibular
 mechanism F L DIXON Ann Otol Rhinol & Laryn-
 gol 923, xxxii, 60 [315]
- Some remarks on nystagmus G W MACKENZIE
 Ann Otol Rhinol & Laryngol, 923, xxxii, 47 [315]
- Contribution to the theory of the rapid phase of vestibular
 nystagmus G V T BOHMER Arch internat
 de laryngol etc Par 923, xxxi, 202
- The diagnosis and treatment of otitis media A G
 WILKINS U S N val M Bull 923, xviii, 698
- Bilateral otitis and suppurative thyroiditis in the course
 of general streptococcal infection RUMOV Arch
 internat de laryngol etc Par 923, xxxi, 203
- Acute otitis media with jugular bulb thrombosis E
 W THOM WILLIAMS Brit M J 923, 4, 4
- Otitis media, mastoiditis, and disease of the nasal
 accessory sinuses as causative factors in malnutrition in
 children T H OGDEN Ann Otol Rhinol & Laryngol
 923, xxxii, 56
- Chronic suppurative otitis media H E BOYER Ann
 Otol Rhinol & Laryngol 923, xxxii, 577 [315]
- The treatment of otitis media with tubercles G
 THOMSON and CONDERS Ann Otol Rhinol & Laryngol,
 923, xxxii, 149 [316]
- The treatment of acute otitis media in children T B
 LARROW Brit J Child Dis 923, xi, 65
- The radical operation in chronic suppurative otitis
 media consideration of the technique The use of the
 primary skin graft and the result of the operation with
 particular reference to the function of the organ E B
 DIXON Laryngoscope, 923, xxxii, 24 [317]
- Mastoidal disease with lateral sinus infection H M
 J Med J Australia, 923, 4, 623
- Granuloma of the auditory canal complicating
 mastoiditis W HANCOCK Laryngoscope, 923, xxxii,
 414
- Methods for promoting rapid healing in the simple
 mastoid operation L L HERVEY J Iowa State M.
 Soc, 923, xxi, 224
- Observations on the blood-clot dressing in mastoidec-
 tomy G E DAVIS Laryngoscope, 923, xxxii, 44
- ### Nose
- Depressed nasal deformities A comparison of the pro-
 sthetic values of paraffin, bone, cartilage, and celluloid,
 with report of cases corrected with celluloid implants by
 the author's method J D LAWRIE Ann Otol Rhinol &
 Laryngol 923, xxxii, 32

- The correction of external deformities of the nose
S. ISRAEL. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 504
- Nasal disfigurement and its correction. D. GUTHRIE
J Laryngol & Otol 923 xxxviii, 300
- Acute atresia of the nasal septum. S. M. MORA. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 403
- Idiopathic perforation of the nasal septum, atelectasis with pediculated flap of mucous membrane cure
J. N. ROY. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 554
- Submucous resection—complications and after results
N. S. WILKINSON. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 387
- Compression of the lower turbinate as high malformation of the nasal septum. O. DICKER. *Arch internat de laryngol et Par* 9 3, xxix, 46
- An operation for atrophic rhinitis. J. ADAM. *Brit M J* 9 3, 4, 103
- A specimen from case of multiple papillomata of the nose. H. J. B. DE DAVEN. *Proc Roy Soc Med Lond* 9 3, xvi, Sect Laryngol 46
- A case of sarcoma of the nose cured by radium. E. M. WOODMAN. *Proc Roy Soc Med Lond* 9 3, xvi, Sect Laryngol 49
- Tumor of the nasopharynx. F. C. O'BRIEN. *Proc Roy Soc Med Lond* 9 3, xv, Sect Laryngol 35
- A case of rhinospondylosis. J. H. ASHCROFT and A. L. TUCKER. *J Laryngol & Otol* 923, xxxvii, 305
- Notes on the treatment by electrolysis of some affections of the nose and ear. A. R. FRIEL. *Lancet*, 923, cxxv, 305
- Headaches of nose origin. E. D. ALLGATER. *I. Internat J Surg* 923, xxxv, 57
- The nasal accessory sinuses and optic nerve disturbances
J. E. DODGE. *Virginia M Month* 9 3, 85
- Pulmonary symptoms incident to infection of the accessory sinuses of the nose. R. T. McLESTER. *U S Naval M Bull*, 923, xviii, 669
- The bacteriology of infected nasal accessory sinuses
W. E. CART and E. McGINNIS. *Laryngoscope*, 923, xxxii, 424
- Rhinomycosis from swimming. R. A. F. ROY. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 516 [317]
- Infection of the accessory sinuses in children, 14th report of cases. E. A. LOOMIS. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 417
- Complications of paranasal sinus disease in infants and young children. L. W. DEAN. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 385 [318]
- A severe case of acute paranasal sinusitis. S. THOMPSON. *Brit M J* 923 4, 924
- Stereorhinoscopy of the accessory sinuses. G. W. GARTER. *Am J Roentgenol* 9 3, 4, 407
- The treatment of acute sinus infections. L. M. HURD. *Ann Otol Rhinol & Laryngol* 9 3, xxix, 393
- Acute frontal sinusitis with varied buccal floor associated with feverishness. P. CARTER. *Arch internat de laryngol et Par* 9 3, xxix, 333
- Ethmoiditis. W. L. MASON. *Virginia M Month* 923, 96
- Ethmoidal disease and systemic conditions. H. HARE. *Med Times*, 923, h, 30
- Ethmoiditis diagnosis and treatment. E. O. GILL. *Virginia M Month* 923 4, 93
- Practical consideration of ethmoidophenoidal sinusitis. J. H. HARTER. *Laryngoscope*, 9 3, xxxii, 47 [319]
- Nasal or sphenoidal sinusitis. M. B. BOENIGER. *Texas State J M* 923, xii, 33 [318]
- A case of sarcoma of the spine. J. H. SERVICE and H. GALL. *J Roy Army Med Corps, Lond* 923, xi, 454
- An improved antrum-exploring trocar and cannula. H. M. WILKINSON. *Proc Roy Soc Med Lond* 923, xvi, Sect Laryngol 53
- A case of ossification occurring in an infant. J. PROCTOR. *Arch internat de laryngol et Par* 923, xxix, 48
- A case of empyema and polyp of the maxillary sinus and the sliding flap operation of antrum closure. N. L. FOURCOURT. *Dental Cosmos*, 923, lxxv, 585
- Some further observations on the etiology and treatment of maxillary sinusitis. H. V. DUTROW. *Ann Otol Rhinol & Laryngol* 1923, xxxix, 398
- N I th
- Dental relations of the eye, ear, nose, and throat. W. H. HANSEN. *Ann Otol Rhinol & Laryngol* 1923, xxxix, 497
- Discussion on infections of the teeth and gums in their relationship to the nose, throat and ear. P. W. RYAN, WILLIAMS, J. DUNBAR, GRANT, H. TILLEY and others. *Proc Roy Soc Med Lond* 9 3, xv, Sect Otol, 35
- Some diseases of the mouth, jaws and face surgically treated. M. N. FLEISCHMANN. *J. Lancet*, 923, xlii, 507
- Co-operation between the medical and the dental professions in combating diseases of the buccal cavity. J. B. DEANER. *Dental Cosmos*, 923, lxxv, 666
- Cancer of the mouth and jaw. V. P. BLAIR and M. J. MOSKOWITZ. *Internat J Orthodont, Oral Surg & Radiography* 9 3, ix, 8 [319]
- The surgery of carcinoma of the mucous lining of the mouth. L. HENDERSON. *Brit J Clin Chir* 19 3, cxxviii, 190 [319]
- Ulcerative stomatitis and its treatment by the intra-venous injection of arsenic. L. A. MOSCOW. *Am J Dis Child* 9 3, xxv, 354 [320]
- Antiseptic treatment of aphthous gingivitis. J. A. KOSCHER. *Am J Clin Med* 9 3, xxv, 343 [320]
- Surgical treatment of gingivitis. L. NORTON. *Proc 2nd Par* 923, xxix, 527
- Carcinoma of the floor of the mouth. D. QUINN. *Am J Roentgenol* 9 3, 46
- A case of congenital hemimicroglossia with disturbance of the locomotor apparatus of the side opposite the lingual lesion. J. N. ROY. *Ann Otol Rhinol & Laryngol* 923, xxix, 519
- Parachylozoenous glossitis without pus. KANDLERT and LAPOUR. *Arch internat de laryngol et Par* 923, xxix, 326
- A case of acute suppurative glossitis. C. VALLIER and QUETRY. *Arch internat de laryngol et Par* 923, xxix, 330
- Phlegmon of the tongue. E. DELANVOY. *Arch internat de laryngol et Par* 923, xxx, 48
- Necrosis of the tongue from actinomycosis by surgical methods and radium. BÉRAUD. *Lyon chir* 19 3, ix, 7
- Tuberculosis about the dorsum of the tongue. W. HIRWARTH. *Proc Roy Soc Med Lond* 9 3, xv, Sect Laryngol 50
- Cancer of the tongue lips and cheek. V. P. BLAIR and M. J. MOSKOWITZ. *Internat J Orthodont, Oral Surg & Radiography* 923, ix, 468
- Cancer of the tongue involving the floor of the mouth and lower lip without adenopathy. G. L. HARTMAN. *Internat Bull et infir Soc anat de Pa* 923, xxix, 40

- Cancer of the tongue treated by combination of surgical methods and radiotherapy. BFA and L. on chir 921 ix, 7
- Cloacal spasm of the palate. D M K. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 57
- A case of ulceration of the palate and larynx. T J TAYLOR. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 53
- The use of the delayed flap in secondary operations on the palate and nostril. G B N. *Minnesota Med* 923, 4, 14

Throat

- Notes on the practice of personal endoscopy. W B SARTER. *Brit Clin N Am* 93, xi, 757
- Throat and ear symptoms in rheumatic cases. D MAC RAE. *Laryngoscope* 93, xxxiii, 436
- Rhinopharyngitis: their rôle in congestion and the development of certain infectious diseases. J CARL J de m'd de Bordeaux 93, xvi
- Tuberculosis of the upper air passages. L D PORTER. *Rhode Island M J* 923, 43
- Swelling on the posterior wall of the pharynx. F SERRA. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 57
- Tuberculosis of the pharynx. N P TRUSSARD and G C CECIL. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 5
- Extensive laceration of the palate pharynx and larynx. W HOWARTH. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 50
- Tumors of pharyngeal squamous. F I COOPER. *Arch internat de laryngol et Par* 93, xix
- The function of the tongue and its relation to nasal lesions. S M BOERHA. *Arch internat de laryngol et Par* 923, xxix, 297
- Unhealthy tongue associated with cervical adenitis. W G HOWARTH and S R GLOVE. *Lancet* 93, cv, 30
- The cocaine in treatment of disordered and enlarged tonsils. J C G WADSWORTH. *Am J Clin M* 93, xxx, 406
- X-ray and radium treatment of infected tonsils and adenoids. L L W LUTHERY. *Virginia M Month* 93, 77
- The electrocoagulation method of treating disordered tonsils. F J NOLAN. *J Am M Ass* 93, lxxx, 813
- Tonsillectomy, electric coagulation and desiccation. A M MacWILLIAM. *N York M J & Med Rec* 93, cv, 73
- The surgical control of bleeding following tonsillectomy. J J RAYNE. *Laryngoscope* 93, xxviii, 446
- Septic following tonsillectomy. F W PRINCE. *Ann Surg* 93, lxxvii, 760
- Cancer of the right tonsil coexisting with leucæmia plastica. C MORGAN and L CORNELL. *Bull et m'ém Soc anat de Par* 923, xcix, 80
- Lympho-sarcoma of the tonsil the thyroid and both testicles. H L RUCKER and C LAURENCE. *J de m'd de Bordeaux* 93, xvi, 54
- An X-ray study in intubation. I OGDON and D F EARLE. *Laryngoscope* 93, xxxii, 40
- Laryngeal complications and influenza. V S. *Arch internat de laryngol et Par* 93, xix, 57
- Metastatic laryngeal carcinoma. S O FELLON. *Ann Otol Rhinol & Laryngol* 93, xxxi, 588
- Laryngectomy for complete subglottic stenosis. W H ARTH. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 45

- Apnoea from paralysis of the left vocal cord. N LARKY. *J Am M Ass* 93, lxxx, 816
- Ventriculobronchostomy for double abductor paralysis. W HOWARTH. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 47
- A case of outgrowth from the entrance in subject of pulmonary tuberculosis. J DUNN. *GRA Y Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 55
- Laryngeal growth removed by indirect laryngoscopy. A WATTS. *Internat J Surg* 93, xxxiv, 244
- A specimen from the post-mortem room of a large cyst of the office of the larynx arising from the aryteno-epiglottic fold. I D D D M. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 54
- Multiple pyelomata of the larynx. H J B. *D M Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 45
- Tumor of the larynx? malignant. W H JEWELL. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 57
- Complete laryngectomy for malignant disease. W HOWARTH. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 40
- A laryngeal cyst for diagnosis. H B JONES. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 5
- Presentation of laryngectomized patient. HIRVOJ. *Arch de med chir & especial* 93, xi, an de la acad med-quirurg 370

Neck

- Certain considerations of thyroid disease from the standpoint of etiology, diagnosis and clinical management. I SWITZER. *Ann Clin Med* 93, 5, 53
- Chronic thyrotoxicosis. W S THOMAS and C W WELSH. *Clifton M J Bull Clifton Springs N Y* 93, xv, 122
- The vital capacity in hyperthyroidism. Its study of the influence of posture. Preliminary report. I M RUSKIN. *Arch Int M d* 93, xxxv, 9
- Hyperthyroidism: new clinical signs. H H LEE. *J Internat Med* 93, 43
- Adrenalin as potential factor in hyperthyroidism. D J HARRIS. *Brit M J* 93, 5
- Hyperthyroidism as cause of severe tetanic convulsions following minor spinal operations. A W BOURKE. *Lancet* 93, xcvi
- A review of the treatment of hyperthyroidism by all methods, with summary of the authors' experience with roentgen therapy. T A GROOVER, A C CARRUTHER and L A MARRITT. *Am J Roentgenol* 923, 385
- The surgical treatment of hyperthyroidism. C W CARRUTHER. *N York M J* 93, xvi, 450
- The relation between thyroid disease and tonsillar infection. L I DUNN. *Ann Otol Rhinol & Laryngol* 93, xxxii, 467
- The clinical value of the Goetsch test. J M REAN and K S H. *Med Clin N Am* 93, 57
- The influence of the thyroid gland on the response to adrenalin. D M J. *Brit M J* 93, 966
- A permissible breakfast prior to basal metabolism measurements. C G BRYNDA and I G B. *Proc Boston M & S J* 93, clxxxviii, 849
- Basal metabolism in the estimation and interpretation of the basal metabolic rate. B MORCO. *Northwest Med* 93, xxxi, 303
- Statistical discussion on goiter. M STONE. *Deutsche Ztschr f Chir* 923, clxxvi, 35
- The pathologic physiology of the different anæsthesia of goiter and their influence on the biology. F DE QUINCY. *Schweiz med Wchnsch* 93, liii
- A clinical classification of goiter. J A BOCKA. *Un Colorado Med* 93, xx, 60

The symptomatology, diagnosis, and classification of goiter. A S JACKSON and R. H. JACKSON. *Wiscronsin M J* 9 3, xxi, 3.

The parasitic etiology of endemic goiter. C WAGGLEN. *Mitt a d Grenzgeb d Med Chir* 9 3, xxvi, 34. [125]

Goiter and focal infections. F W LANOOSTROT. *Internat J Surg*, 923, xxvi, 248.

The prevention and treatment of simple goiter. D MARINE. *Atlantic M J* 923, xxvi, 437. [125]

X ray and radium treatment of goiter. G W OLIVER. *Atlantic M J* 10 3, xxvi, 5 6. [126]

Discussion of symptoms on goiter. S J WATKINS, L. G. COLE, C H J RASKE, and others. *Atlantic M J* 1923, xxvi, 5 9. [126]

Factors of safety in thyroid surgery. W BARTHELE. *Ann Surg* 9 3, lxxvii, 685.

The surgical treatment of goiter. H L Foss. *Atlantic M J* 923, xxvi, 508. [127]

A technique of thyroidectomy. I H LARRY. *Surg Gynec & Obst*, 923, xxvii, 8 5.

Protection of the parathyroid glands. F DE QUERAIN. *Beitr klin Chir* 1923, cxviii, 97. [127]

The question of drainage after thyroidectomy. J UJAKET. *Arch f klin Chir* 1923, cxviii, 599. [128]

An analysis of my end results in thyroid surgery. C A PORTER. *Surg, Gynec & Obst*, 1923, xxvii, 6 1. [128]

Acetone following thyroid operations. R S HUSKIN and C W WELCH. *Chicon Med Bull* Clifton Springs, N Y 923, ix, 85.

The mortality rate following operations on the thyroid gland. C H MAYO and W M BOOTHBY. *J Am M Ass*, 9 3, lxxx, 86. [129]

The prevention of exophthalmic goiter. I BEAR. *Endocrinology* 9 3, vii, 4 5.

Signs and symptoms in exophthalmic goiter. C F McCLINTIC. *J Michigan State M Soc* 923, xii, 577.

Studies of Graves syndrome and the involuntary nervous system. II The clinical manifestations of disturbances of the involuntary nervous system (sympathetic imbalance). L KIRKEE and H T HYMAN. *Am J M Sc* 9 3, lxxv, 5 3. [129]

Does diet influence the course of the basal metabolic rate in exophthalmic goiter? H G WALLER and M V WOODWARD. *J Michigan State M Soc* 923, xii, 575.

Cardiac disorders accompanying exophthalmic goiter. E P BOAS. *J Am M Ass* 9 3, lxxx, 683.

Exophthalmic goiter following varicella and mumps in a child with states thymolymphatic. H WAGGLEN. *Endocrinology* 923, vii, 437.

X ray treatment in Basedow's disease. L EOLDO. *Fortschr d Geb d Roentgenstrahlen*, 923, xxi, 7. [130]

The roentgen ray treatment of Basedow's disease. C. FRIED. *Deutsche Zeitsch f Chir* 923, cxvii, 54. [130]

The effect of heat upon operations for exophthalmic goiter. A J WALTON. *Brit M J* 9 3, i, 2045.

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings: Cranial Nerves

The management of acute brain injuries. G E NEU. *Made Nebraska State M J* 923, vii, 207.

The old head injury case. J C MILLAR. *J Am M Ass* 9 3, lxxx, 7047. [131]

Anatomical-clinical considerations on intracranial and traumatic subdural hemorrhage in the adult. P WERT. *Revue de chir Par* 9 3, xii, 50.

Encephalitis following interference with dead teeth. Report of two cases. R BURKE. *J J Am M Ass* 923, lxxx, 592.

Encephalitis lethargica, difficulties in the differential diagnosis and the late sequelae. G W HALL. *Wiscronsin M J* 9 3, xxi, 4.

A case of encephalitis lethargica recognized by change in behavior. J H GRILLAT. *Lancet*, 923, cxv, 513.

High grade choked disks in epidemic encephalitis. W O SPILLER. *J Am M Ass* 9 3, lxxx, 843.

The treatment of epidemic encephalitis by intranasal injections of cases. KOCH. *Praxis med Par* 9 3, xxi, 496.

Specific serum treatment of epidemic (lethargic) encephalitis. Further results. E C ROSENOW. *J Am M Ass*, 923, lxxx, 853. [131]

Brain abscess of the temporoparietal lobe complicated by acute meningitis. Operation and recovery. E O GILL. *South M J* 1923, xvi, 483.

A cerebellar abscess secondary to an acute benign suppurative otitis. NATCHO St Andrew. *Arch internat de laryngol*, etc, Par 923, xxi, 52.

A case of hydatid cerebellar cyst. J BERTHARD and G MARCOWITZ. *Bull et mtes Soc anat de Par* 923, cxvi, 169.

A case of cerebellar cyst in an infant. H O JACOB. *Am J Dis Child* 9 3, xiv, 435.

A case of cerebellar abscess in a child. J P PARKMAN and L R BENDER. *Lancet*, 923, cxv, 197.

Primary glioma of the choroid and optic nerves in their intracranial portions. P MARTIN and H CARRON. *Arch Ophth* 1923, ix, 209.

The choroid plexus and ventricles of the brain as secreting organ. J BLAND-SUTTON. *Lancet*, 1923, cxv, 43.

Resection of the choroid plexus in severe unilateral internal hydrocephalus. C HROCHESKOVY. *Arch f klin Chir* 1923, cxviii, 749. [132]

T cases of acquired hydrocephalus. T FRACANI. *Rev med d Roma* 9 3, xix, 3.

A method for the localization of brain tumors in comatose patients; the determination of communication between the cerebral ventricles and the estimation of their position and size without the injection of air (ventriculostomation). W E D VON. *Surg Gynec & Obst*, 1923, xxvii, 44.

Calcification in brain tumors. R R NEWELL. *Surg Clin N Am* 9 3, xi, 773.

The operative removal of brain tumors. C A ELIASSON. *Ann Surg* 1923, lxxvii, 769.

A tumor removed from the brain of a child aged years. H S SOUTHWELL. *Proc Roy Soc Med Lond* 923, xvi, Clin Sect 57.

Hyperplasia of the hypophysis cerebri? J D CONNORS. *Brit J Ophth* 1923, vii, 160.

Grossness of the hypophysis. E COME. *Arch f path Anat* 19 3, cxii, 45. [133]

Routes of approach to the hypophyseal region. R LAROCHE and P WERTHEIMER. *J de chir* 923, xii, 543.

The pituitary gland, especially in relation to the problem of its supposed significance in sexual development. K H KRAUSE. *Endocrinology* 923, vii, 579.

Ghosts of the optic thalamus. L A LARSEN and F W ALDER. *Am J Ophth* 93, 55 vi, 468. [333]
The frontal method of Schöeder Duret without extirpation of the orbit: the possibility of relative exploration of the base of the brain. P BASTIANELLI. *Arch ital di chir* 1933, vii, 140.

Internal hemorrhagic pachymeningitis in infancy: report of five cases. C W BURNHAM and H J GREENBERGER. *J Am M Ass* 93, 1xxx, 604. [333]

Acute meningitis of otitic origin. DUBREUILLE vs LAMOTHE. *Arch internat de laryngol etc Par* 93, xxx, 48.

Otitic meningitis. G J JEVENS. *J Laryngol & Otol* 93, xxxvii, 304.

Tuberculous meningitis. D PATTERSON. *Practitioner* 93, cx, 43.

Pneumococcus cerebrospinal meningitis: recovery following serotherapy. J HALL. *Bull et mém Soc méd d hôp de Par* 93, 38 xxxii, 757.

Suppurative pneumococcus meningitis secondary to otitis: recovery. A NERVEN and E CÉSARI. *Bull et mém Soc méd d hôp de Par* 93, 38 xxxii, 763.

The operative treatment of suppurative meningitis. W P LUGAZZONI. *Atlantic M J* 93, xxvi, 575.

Usual causes of intracranial pressure. C E HILL. *Canadian Pract* 93, xlviii, 3.

Transorbital puncture of the paranasal ganglion. E ADEL. *Riforma med* 93, xxxix, 467.

Spinal Cord and Its Coverings

Laminectomy in the paraplegias of Pott disease. N SHARPE. *Am J Surg* 93, xxxvii, 14.

Acute ascending meningomyelitis possibly resulting from arphenazine therapy. H R VICKS. *Boston M & S J* 93, clxxxvii, 895. [334]

Peripheral Nerves

Some peripheral nerve problems. D LARSEN. *Boston M & S J* 93, clxxxvii, 975.

Artificial nerve branches for the innervation of paralyzed muscles. B BROOKER. *Arch Surg* 93, vi, 73. [334]

The Stoffer operation for spastic paralysis. C H HEYER. *Surg Gynec & Obst* 93, xxxvi, 63. [315]

Double union of one nerve trunk to another. P MAMMIG. *Arch f klin Chir* 93, cxx, 665.

Gemist injury involving the ulnar nerve. A BAK. *Wiener Klinische Wochenschrift* 93, xliii, 453.

Late paralysis of the ulnar nerve. P GUINARD. *Arch franco belges de chir* 93, xxvi, 307.

Two cases of anomaly of the external popliteal nerve. G FLORENCE. *Bull et mém Soc anat de Par* 93, xxii, 318.

The surgical treatment of scotias. HIELE. *Deutsche Zeitsch f Chir* 93, clxxxv.

Sympathetic Nerves

Some considerations on the pathology of the sympathetic nerve trunk. C ARABER. *Presse méd Par* 93, xxxi, 570.

Surgical relations of the sympathetic nervous system. G P MILLER. *Ann Surg* 93, lxxvii, 641.

Cervical sympathectomy for angina pectoris. P K BROWN. *J Am M Ass* 93, lxxx, 60.

A note on the treatment of chronic ulceration of the lower extremities. P K FORD. *Lancet*, 93, clxxv, 605. [335]

Miscellaneous

Sugar findings in normal and pathological spinal fluids. A O KELLEY. *South M J* 93, xvi, 407.

Spinal puncture as an aid to diagnosis and therapeutics. J F HERRICK. *J Low State M Soc* 93, xii, 36.

The X ray in neurological diagnosis. H W CHURCH. *Am J Roentgenol* 93, x, 437.

Different types of pain from medullary compression. J A BARNH. *Presse méd Par* 93, xxxi, 449.

SURGERY OF THE CHEST

Chest Wall and Breast

Polythelia. R D HOW. *Brit M J* 93, 928.

Early and curable disease of the breast. G L CROFT. *Brit M J*, 933, 935.

Tuberculous disease of the breast. D C ELLIOT. *Ann Surg* 93, lxxvii, 66.

Tumors of the breast—benign and malignant. A PRINCE. *Ann Surg* 93, lxxvii, 68.

Cancer of the breast. C KOWENOW. *Brit M J* 93, 747. [336]

Cancer of the female breast, factors influencing best surgical results. J N JACOBSON. *J Arkansas M Soc* 93, xi, 12.

A large sarcoma of the breast. C F INGRAM. *and P MORRIS. Bull et mém Soc anat de Par* 93, xxi, 76.

Intraoperative changes following roentgen treatment of breast carcinoma. T A GROOVER, A C CROFT, and F A MERRITT. *Am J Roentgenol* 93, x, 47.

Trachea, Lungs, and Pleura

Tracheal obstruction due to (?) arrest of development of the trachea. C A S RINDT. *Proc Roy Soc Med Lond* 93, xi, Sect. Laryngol, 58.

Mounted specimen showing two foreign bodies—one movable and the other fixed, in the trachea of child aged 3 years. H J BAKER. *D vs Proc Roy Soc Med Lond* 93, xvi, Sect. Laryngol, 55.

Mounted specimen showing thirty-three pieces impacted in perforation between the oesophagus and trachea of baby aged 3 months. H J BA. *D vs Proc Roy Soc Med Lond* 93, xvi, Sect. Laryngol, 55.

Tracheotomy over the bronchoscope. E HALPERN. *and A AUBIN. Arch internat de laryngol etc Par* 93, xxx, 45.

Some unappreciated findings in the lungs of normal children. C M ANDERSON and F H BARTER. *Am J M Sc* 93, clxxv, 83.

Pulmonary embolism following the filling of fistula with Beck's haemorrhagic paste. A LAM. *Berlin klin Chir* 1933, clxxxvii, 575.

Acute oedema of the lungs. V MORLEY. *Brit M J* 93, 930.

A case of asphyxia of the lung without abscess of the liver cured by emesis. RAMOND DEVOILLE and LAURE. *Bull et mém Soc méd d hôp de Par* 93, 38 xxxii, 655.

Lung abscess. G J HEYER. *Minnesota Med* 93, vi, 270. [336]

Pulmonary abscess following nose and throat surgery. J PERRY. *Ann Otol Rhinol & Laryngol* 93 xxix, 43.

A study of lung abscess by serial radiographic examination. L R S VIX. *J Radiol* 1933, iv 83. [337]

Pulmonary hydatids. W MIXER. *Ann Surg* 93, lxxv, 777.

Injection of iodol in the treatment of bronchocystic neosis fetula. TOTTRE. *Bull et mémo Soc de chir de Par* 93, xlii, 700.

The diagnosis and treatment of pulmonary conditions through the bronchoscope. *Ann Otol Rhinol & Laryngol* 93, xxviii, 437.

The surgical treatment of unilateral pulmonary tuber culosis. I ARCHERD. *Ann Surg* 93, lxxvi, 65.

T cases of primary cancer of the lung. G TAVITTO and I BILFANCE. *Med Libera* 93, x, 34.

The pleuro-pulmonary reflex: its etiology, prevention and treatment. B P STRICKLAND. *Ann J M Sc* 93 clii, 836.

Pleuroxy and pseudo pleuroxy in infancy. M GERTNER. *Bol Acad arc medic Rio de Janeiro*, 93, xvi, 71.

Diaphragmatic pleuroxy. H B WATSON. *J Am M Ass* 93, lxxx, 664.

Paravertebral anasthesia in acute suppurative pleuroxy. I SCRY. *J Am M Ass* 93, lxxv, 16.

The composition of the gases in artificial pneumo thorax. L HILL and J A CAMPBELL. *Brit M J* 93, 1752.

Asphyxia, an analysis of 100 cases in relation to treat ment. H L BRICE. *Minnesota Med* 93, 40. [139]

Empyema in the first 15 years of life, its diagnosis and the value of immediate resection of rib. H C CAMPBELL and A A CHAMBER. *Lancet* 93, cccv, 1007. [139]

Posterior gravity drainage in empyema: the strategic seat of election. J O COMOR. *Brit M J* 93, 4758.

Heart and Pericardium

Diseases of the pericardium. R S MORRIS and C F LITTLE. *Ohio State M J* 93, xi, 404.

Tuberculous pericarditis with large serous effusion: urgent pericardiotomy without drainage. BOTH. *Rochester B H et mémo Soc anat de Par* 93, xxvi, 237.

Pericardiotomy for purulent pericarditis. C GAMBER. *Arch ital di chir* 1933, vi, 69. [139]

Artificial pericardiopericardium. R W A SALMON. *Arch Radiol & Electrotherapy* 1933, xxviii, 30. [139]

A case of "bullet in the heart" with recovery. F C S EARLE. *Ann J Roentgenol* 93, 454.

Cardiotomy and shuntotomy for mitral stenosis: experimental observations and clinical notes concerning operated case with recovery. S A LEVY and E C COTLER. *Boston M & S J* 93, clxxviii, 103.

Oesophagus and Mediastinum

The treatment congenital atresia of the oesophagus. E D SMITH. *Am J Surg* 93, xxviii, 57.

Carcinatal stenosis of the oesophagus caused by conser-vative preparations. L H CLERY. *J Am M Ass* 93, lxxv, 1600.

Diverticula of the oesophagus. L GERTY. *Bull et mémo Soc anat de Par* 93, xxix, 05.

Traction pouches: diverticula of the oesophagus in girl of 8 years. G PERRY. *Bull et mémo Soc anat de Par* 93, xxvi, 297.

Foreign bodies in the oesophagus. D SANSON. *Brazil med* 93, xxviii, 268.

A causative factor in cancer of the oesophagus. R A BULLER. *Seminars med* 93, xvi, 683. [140]

Glandular epithelioma of the lower end of the oesophagus: death from perforation of the stomach. DELATRE. *Bull et mémo Soc anat de Par* 93, xxviii, 60.

Carcinoma of the oesophagus. J M MARCOS and E A AMORIM. *N York M J & Med Rec* 93, cxvii, 673.

The treatment of carcinoma of the oesophagus by deep X-ray therapy. A H PERK. *Am J Roentgenol* 93, 459.

Unexpected death, especially in children, with com-plaints on status lymphaticus. F OLIVY and R C DEN. *Lancet* 93, cccv, 30.

Report of case of status lymphaticus with autopsy findings. C L STORV. *Laryngoscope*, 1933, xxviii, 436.

Thymus disease in children: 11th report of case. H E HANSEN. *Nebraska State M J* 1933, viii.

Primary carcinoma of the thymus. V C JACOBSON. *Arch Int Med* 93, xxx, 847.

The diagnosis and treatment of certain mediastinal tumors. W S LAWRENCE. *South M J* 93, xi, 44.

A case of mediastinal tumor. T B COOKLEY. *Arch Pediat* 93, li, 403.

Mediastinal growth with venous thrombosis. J A MAC LAREN. *Brit M J* 93, 4709.

Cervico-mediastinal lymphomatosis. BLANCHOTTE and QUENON. *Bull et mémo Soc méd d hôp de Par* 1933, 30, xxviii, 5.

Miscellaneous

Intrathoracic development of fibroma of costal cage. P DR AL. *Bull et mémo Soc de chir de Par* 1933, xlii, 706.

Traumatic asphyxia. A MONCEY. *Lancet* 1933, cccv, 307.

Primary intrathoracic acroplasma. A J S PRINCE. *Practitioner* 93, ci, 43.

Observations on intrathoracic surgery in the free pleural cavity. J LEVY. *Rev de chir Par* 93, xlii, 59.

Recent phases of thoracic surgery. E A GRANT. *J Am M Ass* 93, lxxx, 823.

Subpleural abscess. G PALLANO. *Policlinico Rome* 1933, sex, chir 74. [141]

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

A review of fifteen cases of umbilical hernia. R CAS ELLI. *Policlinico Rome* 93, xxx, sex, part 640.

Postoperative ventral hernia. H H SEARLES. *Surg Clin N Am* 93, xi, 865.

A terminal tumor involving the colon and suppurating at its center. D ALLARIN. *Bull et mémo Soc anat de Par* 93, xxvi, 56.

Unaccruited hernia of the canal of Nuck. C LATTI. *Policlinico Rome* 93, xxx, sex, part 667.

A case of appendicitis in hernial sac. M DELL. *Ann Policlinico Rome* 93, xxx, sex, part 665.

Vasotactular femoral hernia. E PALLANTINI. *Policlinico Rome* 93, xxx, sex, part 656.

Serousculpted obturator hernia co-existing with reducible femoral hernia. GA TITRE. *Bull et mémo Soc de chir de Par* 93, xlii, 66.

- Strangulated appendicular femoral hernia. A CA
TUTINA Polclin Rome, 9 3, xiv, sez prat 664
- The treatment of paronychia (femoral) hernia. A BRUCKER
Deutsche Zeitschr f Chir 9, cxviii, 28 [341]
- A case of Laugier' hernia treated by radical operation
with twisting of the sac S BIRZ Polclin Rome, 9 3
xiv sez prat 66
- The etiology of indirect inguinal hernia. T E HAM
MOND Lancet, 933 cxv, 206
- A modified operation for the radical cure of inguinal
hernia. J O CONNOR Med Press, 933, cxv 458
- A modified inguinal hernioplasty. D SNEYDER Ann
Surg 933, lxviii 48
- T cases of colon bacillus peritonitis. D S APPERT
Rev. med d Rosario, 9 3, xii,
- Biliary peritonitis without perforation. H BURCK
MAUER Beitr. klin Chir, 933 cxviii, 200 [341]
- On localized peritonitis due to intestinal perforation in
paratyphoid fever report of case A E M WOOD
Brit J Child Dis 9 3, xx, 9
- Peritonitis in the course of typhoid fever. J L VIERA
Rev med d Uruguay 9 3, xii, 6
- Postoperative treatment of peritonitis. H F PRUITT
J low. State M Soc 9 3, xii, 20
- Drainage of the peritoneal cavity. C POWELL Colo
rado Med 933, xx, 65
- A new method of preventing postoperative peritoneal
adhesions. L HENSTLER Rev. med d Rosario, 9 3, xii, 6
- A study of urinary output and blood pressure changes
resulting to experimental ascites. J M THORNTON and
C I SCHUBT Ann J M Soc 9 3, cxv 880
- Intra abdominal torsion of the great omentum, thout
hernia. D ALLAN and ROUFFIAC Bull et mem Soc
anat de Par 933, xcii 37
- Torsion of the omentum. G H COPPER Ann Surg
933, lxvii, 7
- Mesenteric cysts. E I BARTLETT Surg Clin N Am
933, lx, 8
- A radical tumor of the mesentery extirpation cure. V REAL
Acta Prog de la clin Madrid 9 3, xiv 3 [341]
- ### Gastro-Intestinal Tract
- Studies of the mechanism of movement of the mucous
membrane of the digestive tract. G F REWELL Am J
Roentgenol 9 3, x, 87 [341]
- Foreign bodies in the stomach removed by operation.
A G BRILL Brit M J 9 3, 8
- Gastric analysis and the constancy of the percutaneous
relationship among the urinary factors of the gastric
secretion. B S LEVIN J Lab & Clin Med 933,
xii 6
- Fractional catheterization with different test break
fasts. HYMANOV. GA. AND, TOURS Arch de med
cirug 9 special 9 3, xi as acid med-quint 30
- The action of certain chemicals upon the secretion
of gastric juice. T HILL no Med Press 9 3,
507
- Post-operative dilatation of the stomach. T HILL
Lancet 9 3, cxviii de Bordeaux 9 3, xiv 309
- De dilatation of the stomach. C CHARLING Bull et
mem Soc anat de Par 9 3, xcii 202
- Conspiral hypertrophic stenosis of the pylorus. A
ZENO and C MENDONÇA Rev. med d Rosario, 9 3
xii, 20
- The diagnosis and treatment of pyloric stenosis. W. P
L. Med Clin N Am 9 3, j, 201 [342]
- Hypertrophic dyspepsia and liver. E. AUGER Arch
de med cirug 9 special 9 3, xi, 369
- The etiology of gastroduodenal ulcer. E PALMER N
York M J & Med Rec 9 3, cxvii, 659
- Gastrojejunal and jejunal ulcer the cause, diagnosis,
treatment. J H WOOLLEY Surg Clin N Am 9 3,
ii 657
- Acute perforation of the stomach and duodenum, with
report of sixty cases. C L GIBSON Ann J M Soc 9 3
cxv 809
- Perforated ulcer of the stomach and duodenum. E C
CUTLER and F C NEWTON Boston M & S J 933,
cxviii, 789 [343]
- Three cases of perforation of the stomach by ulcer.
CHABRONIER Bull et mem Soc de chir de Par 9 3, xlix
494
- Two cases of perforation of the duodenum by ulcer.
FERRARI Bull et mem Soc de chir de Par 9 3, xlix
494
- A perforated and situated pyloric ulcer stenosis of the
pyloric canal. R SCHULTZ Bull et mem Soc anat de
Par 933, xcii, 65
- Hour glass contraction of the stomach. W A DOWNES
Surg Clin N Am 9 3, iii, 343 [343]
- The treatment of simple ulcers of the lower curv. ture
CHABRONIER Arch franco belges de chir 9 3, xvi, 3
- The results of the medical treatment of gastric and duodenal
ulcer. N A NIELSEN Acta med Scandin 9 3
lxvii [343]
- Operative indications in gastro-duodenal ulcers. E. EN-
RIQUET and P. CARRIE Arch franco belges de chir 9 3,
xvi, 3
- The surgical treatment of gastric and duodenal ulcer.
J J WELLS N York M J & Med Rec 9 3, cxvii, 663
- Hemogastrectomy as treatment of ulcer in bulbular
stomach. GOLLICHO Arch franco belges de chir 9 3,
xvi, 356
- Resection of the stomach for ulcer immediate feeding
with duodenal tube. H FERRIER Ann Surg 933, lxvii,
773
- Linitis plastica—with report of two cases. A F R
A. DEWEZ Am J M Soc, 9 3, cxv 799
- Three cases of pyhosis of the stomach. R ALLENBURY
Ann ital di chir 933, [344]
- Epithelioma of the stomach in ading the pancreas.
E C PIERRE Bull et mem Soc anat de Par 933, xcii,
375
- Primary sarcoma of the stomach and tironia. The
traumatic genesis of tumors. G PIERROCCI Polclin
Rome 933, xxi, sez chir 83 [344]
- A new technique for gastrostomy. Diet. ex Bull et
mem Soc de chir de Par 9 3, xlix, 69
- Deflection of the biliary and pancreatic secretions by
jejunogastrostomy as complement of gastro-enterostomy
or gastrostomy. L CHIR and N P. Bruxelles med.
9 3, ii, 57 [345]
- Pre-operative and postoperative treatment in operations
on the stomach. V P. LEBERT Arch franco belges de chir
9 3, xvi, 369
- Surgical possibilities in traumatic rupture of the intes-
tine. A L LOCKWOOD Canadian M Am J 9 3, xii,
3 [345]
- Four cases of Volvulus of the small intestine with obser-
vations on the etiology. F J TIER Canadian M Am J
9 3, xii 400
- Intestinal perforation complicating typhoid fever—a
report of three cases with recovery. M BERGLUND Therap
Gaz 9 3, 36, xxiii, 400
- Upper intestinal tract obstruction. R L HADEN and
T G ORR J Wisconsin State M Ass 933, xx, 25
- Local obstruction of the bowel. H T RIVERS Ken
tucky M J 933, xii, 265

- Acute intestinal obstruction, with special reference to paralytic ileus following abdominal operations. H Mc KEUR. *J Am M Ass* 1922, 1222, 666.
- The treatment of spastic constipation. C D AARON. *Am J M Sc* 1922, 1217, 8.
- Combustion ileus. K. SCHLAEPFER. *Ann Surg* 1922, 122, 504. [344]
- A case of chronic intestinal obstruction. D D P ULIN. *J Oklahoma State M Ass* 1922, 27, 187.
- Lactic acid in the treatment of chronic enteritis. I H LYON-WILLIAMS. *Brit M J* 1922, 1, 1035.
- The diagnosis and treatment of intestinal obstruction. A McGLAVIN. *Am J M Sc* 1922, 1217, 84.
- The possibility of the intestinal masses as certain types of bacteria determined by cultures from the thoracic duct. C S WILLIAMS and R O BROWN. *Am J M Sc* 1922, 1217, 430. [347]
- The status of present-day methods of examination in the diagnosis of intestinal tuberculosis. W S LAMON. *Minnesota Med.* 1922, 3, 31, 300. [347]
- A contribution to the study of bromate of the intestine. C VACCAR. *Arch ital di chir.* 1922, 3, 31, 589.
- Carcinoma of the small bowel. M M PORTER and S A PORTER. *Am J Roentgenol* 1922, 2, 410.
- A case of primary epithelioma of the small intestine. IL BIRBAUD and A BERGHEIM. *Bull et mém Soc anat de Par* 1922, 1222, 452.
- Primary epithelioma of the small intestine. R LAMON. *Bull et mém Soc anat de Par* 1922, 1222, 35.
- Resection of the intestine. E S ALLAN. *Kentucky M J* 1922, 20, 505.
- Closure of the ends of the intestine. Cuvé. *Bull et mém Soc de chir de Par* 1922, 1222, 698.
- An instrument and method for aseptic anastomosis of the intestine. F E B FULTON. *Surg Gynec & Obst* 1922, 35, 535.
- Duodenal intusssu. H WHITEL. *N York M J & Med Rec* 1922, 1222, 693.
- Biliary calculus causing acute intestinal obstruction. CARRETT. *Bull et mém Soc de chir de Par* 1922, 1222, 723.
- A gall-stone obstructing the small bowel. A WICKES. *Surg Clin N Am* 1922, 3, 31, 677.
- Duodenal intestinal obstruction secondary to gastric polyp, and intussusception due to multiple tonsil agnate. W BERMAN and D CUNNINGHAM. *N York M J & Med Rec* 1922, 1222, 694.
- T cases of duodenal obstruction in infants treated by operation. R C JEWELL and M PAGE. *Proc Roy Soc Med Lond* 1922, 27, Sect Dis Child 90.
- Some observations on duodenal dilatation. J FRIS DEWALD and P F WOOD. *N York M J & Med Rec* 1922, 1222, 655.
- Duodenal sounding. H GARDNER. *Stratford Med* 1922, 1222, 700.
- The diagnosis of duodenal ulcer. F W FORTMONT. *J Indiana State M Ass* 1922, 3, 31, 92.
- Perforated duodenal ulcer in child. W A DOWNING. *Ann Surg* 1922, 1222, 736. [348]
- Eight observations of perforated duodenal gastric ulcers. C GORDON. *Bull et mém Soc de chir de Par* 1922, 1222, 54.
- Resection of the duodenal ulcer of the papilla. K KOCK. *Rochester M J* 1922, 1222, 57.
- Primary lacer of the pylorus. H FROEDER. *Ann Surg* 1922, 1222, 778.
- Postoperative pyloric ulcer with varicose veins perforation into the abdominal wall and transverse colon. R LITV. *Bull et mém Soc anat de Par* 1922, 1222, 183.
- A idiomyoma of the first portion of the pylorus. G BERENSON. *Polish M J* 1922, 1222, 183. [348]
- Two cases of acute intussusception in children, successful recovery. W A THOMSON. *Brit M J* 1922, 1, 971.
- Ileocolic intussusception caused by Meckel's diverticulum and simulating ectopic gestation. H H GARDNER. *Brit M J* 1922, 1, 971.
- Intussusception with Meckel's diverticulum. W VACK. *Med J Australia* 1922, 1, 669.
- Carcinoma of the ileocecal valve capture of loop of small intestine with obstruction, problem of intestinal anastomosis. E RICHMOND. *Surg Clin N Am* 1922, 3, 31, 595.
- Striking hernia of the cecum and appendix in children. V C DAVIS. *Ann Surg* 1922, 1222, 438. [349]
- Diverticula of the appendix. ROYALTY. *Bull et mém Soc anat de Par* 1922, 1222, 370.
- Mitosis of the appendix. R MORLOT and C MATHER. *Bull et mém Soc anat de Par* 1922, 1222, 334.
- Incomplete intussusception of the appendix. H BERN and H FORT. *Ann Surg* 1922, 1222, 334.
- The diagnosis of appendicitis. L DUBOIS. *N York M J & Med Rec* 1922, 1222, 686.
- Nerve disturbances in the abdominal wall in appendicitis. B SCHWARTZ. *Polish M J* 1922, 1, 971. [349]
- The value and limitations of the X ray in the diagnosis of chronic appendicitis. L LITV. *N York M J & Med Rec* 1922, 1222, 683.
- The clinical importance of the chronic changes in the appendix which are discovered by the reaction to F W WATTS. *Boston M J & S J* 1922, 1222, 587. [349]
- Movement to expose danger in appendicitis. C J H. *Ann Surg* 1922, 1222, 687.
- Acute and chronic appendicitis. S CARRO. *Clin y lab* 1922, 1, 333.
- Acute gangrenous or perforative and suppurative retrocecal appendicitis. J M JACOBSON. *Scott M J* 1922, 1222, 683. [350]
- The role of bacillus welchii in gangrenous appendicitis. J E JENNINGS. *N York M J & Med Rec* 1922, 1222, 68.
- Acute appendicitis in children. T H KIDNEY. *Illness M J* 1922, 1, 333.
- Four rare forms of appendicitis. Le FILLARD. *Bull et mém Soc anat de Par* 1922, 1222, 28.
- Appendicitis study in histologic physiology. O C GARDNER. *Practitioner* 1922, 1222, 442.
- Chronic appendicitis and appendicitis. E ROYALTY. *Gynec & Obst* 1922, 1222, 5. [351]
- Secondary fistula secondary to appendicitis recovery after retroperitoneal operations. C LAMONTAGNE. *Bull et mém Soc de chir de Par* 1922, 1222, 756.
- Postoperative recurrent appendicitis. R O'CALLAGHAN. *Canadian M Ass J* 1922, 1222, 434.
- Sebipathic abscess secondary to appendicitis. P H. *Ann Surg* 1922, 1222, 670. [351]
- An adenomyoma involving the vermiform appendix. D DUBOIS. *J Obst & Gynec Brit Emp* 1922, 1222, 224.
- An early benign adenoma of the appendix. L A FINE and C B. *Surg Clin N Am* 1922, 3, 31, 763.
- Volvulus of the large intestine. A H. *Scott M J* 1922, 1, 1050.
- A case of megacolon in child. F. *Practitioner* 1922, 1222, 65.

A case of cirrhosis disease showing symptoms of megacolon, with autopsy R. MILLER Brit J Child Dis 923 ix, 88

Infectious colitis H. F. HEWES Boston M & S J 923 clxxxviii, 994

The surgical treatment of ulcerative colitis D. F. JONES Boston M & S J 923 clxxxviii, 999

A specimen of colon showing multiple perforation resulting from dysentery P. COLE Proc Roy Soc Med Lond 1923, xv, Sect Surg 67

The treatment of stercoral mucocutaneous fistula TURPIN Bull et mêm Soc de chir de Par 923 xlix, 749

Some cases of carcinoma of the colon treated by colectomy SORRY Lyon chir 923 xv,

The surgical physiology of the large intestine C. LEBLANC Arch franco-belges de chir 923 xxvi, 5

Unilateral intrastratal ectoderm G. E. MURPHY Surg Gynec & Obst 923 xxxvi, 773

Colostomy special technique G. K. RICHARDS Surg Clin N Am 923 ix, 897

Involvement of the lymph glands in cancer of the cecum W. M. CRAIG and W. C. MACCARTY Ann Surg 923, lxxvii, 698

An instrumental aid to sigmoidoscopy D. C. M. KENNEDY N Y M J & Med Rec 923, cxvii, 693

Chronic sigmoiditis mistaken for an internal tumor resection, and to-and-fro recovery L. MORREAU Bull et mêm Soc de chir de Par 923 xlix, 74

Simple ulcer of the sigmoid KIRKUP and D. ALLANES Bull et mêm Soc anat d Par 923 xcii, 67

Carcinotal stenosis of the sigmoid A. L. BLANCH J Ohio home State M Am 923, xvi, 86

Blind end-to-end anastomosis of the sigmoid modified HAYES operation presentation of new instrument C. Y. BRIDGEMAN Bull Johns Hopkins Hosp Balt 923 xciv, 97

Hemorrhoids—piles C. J. DREWICK Internat J Surg 923, xxxvi, 310

The treatment of hemorrhoids by sclerosing injections R. BRIMAUVE Bull et mêm Soc méd d hôp de Par 923, 30, xxxix, 686

Rectal papillomata in schistosoma haematobium infections H. C. SCHMIDT and E. A. MILLS Brit M J 923, i, 668

Ischiorectal abscess followed by gas gangrene gas gangrene following trauma S. G. HICKMAN and R. R. TRICK J Am M Am 923 lxxx, 1069

A new method of treating ischiorectal and other abscesses J. P. LOCKHART MURPHY Proc Roy Soc Med Lond 923, xvi, Sect Surg 67

Tuberculosis of the rectum C. V. DRAPER N York M J & Med Rec 923 cxvii, 690

Amputation of the rectum and total proctocolectomy for associated neoplastic and tuberculous processes G. D. AGAZZ Arch ital di chir 923 vi, 60 [351]

Cancer of the rectum and sigmoid in childhood C. H. PETERSON Ann Surg 923 lxxvii, 7

Volvulus of the small intestine in patient with cancer of the rectum R. DELTON Bull et mêm Soc anat d Par 923 xcii, 43

A case which was clinically one of inoperable carcinoma of the rectum treated by colectomy and subsequent resection of cecum colonic segment and colonic caecum for over two years its disappearance of the growth L. F. C. ROBERTS Proc Roy Soc Med Lond 923, xvi, Sect Surg 67

The treatment by radiation of cancer of the rectum H. H. BOWEN and F. W. ALEXANDER Am J Roentgenol 923, x, 230 [351]

Anal fistula, etiology and treatment A. ZENZO and C. PROCA Semana méd 923, xxx, 1006

A new type of drain for use in anorectal fistula J. F. MONTAGUE N York M J & Med Rec 1923, cxvii, 69

Anorectal gonorrhea LEVY WEINMANN J durol méd et chir 923, xi, 3

Liver Gall Bladder Pancreas, and Spleen

The collateral circulation in the portal system F. WALKER Arch f klin Chir 923 cxv, 8

The pathology of human bile secretion, and report on polycholester GUMPERTS Beitr klin Chir 923, cxvii, [352]

Studies on the total bile III On the bile changes caused by pressure obstacle to secretion and on hydro-hepatitis P. D. McILHANN, G. O. BROWN and P. ROOS J Exper Med, 923, xxxvii, 685 [353]

Studies on the total bile IV The enterohepatic circulation of bile pigment G. O. BROWN, P. D. McILHANN, and P. ROOS J Exper Med, 923, xxxvii, 690 [353]

Acute catarrhal jaundice H. C. MICKLE Mil Surgeon, 923 ix, 390 [353]

A case of alcoholic jaundice V. COATES Proc Roy Soc Med Lond 923, xvi, Clin Sect, 26

Non-obstructive jaundice R. J. M. BLOOMER Brit M J 923, 754

The results of ligating the hepatic artery observations on the functional examination of the liver A. KRYNAR Mitt a d Greengrub d Med Chir 923, xxxv, 76 [354]

Studies on the physiology of the liver IV The effect of total removal of the liver after pancreatectomy on the blood sugar level F. C. MARR and T. B. MARGATE Arch Int Med 923, xxxii, 797 [354]

A clinical test for liver function E. BOGGS J Lab & Clin Med 923 ix, 69

Observations on the value of phenoltetrachlorophthalen in estimating liver function G. M. PRINSON and H. L. BOGGS Arch Int Med 923, xxxii, 625 [355]

The movable liver and its successful treatment a new method of operation based on the principle of supporting the liver from below and plastic procedure on the abdominal wall with doubling of the aponeurosis F. J. KAMMER Deutsche Zeitsch f Chir 923, lxxv, 41 [355]

Large intracapsular hemorrhage of the liver A. WENZEL Surg Clin N Am 923 ix, 675

Biliary lymphangitis W. H. FISKE Ohio State M J 923, xxx, 400

A pedunculated hydatid cyst of the liver mistaken for an ectopic spleen FERRARI and VINCIGUERRA Bull et mêm Soc anat d Par 923, xcii, 26

Ambiotic infection of the liver J. W. LAMMORSE J Missouri State M Am 923, xxx, 90

The treatment of liver abscesses by aspiration P. MANSION BARR, G. C. LOW, J. J. PRATT, and A. L. GREENO Lancet, 1923, cxv, 94 [356]

Liver abscess report of 100 operations A. I. LUDLOW Surg Gynec & Obst 923, xxxvi, 336 [357]

Presentation of child with cyst of the liver and typical hydatid fluid ALMOND Arch de med chir y especial 923, xi, an de la acad méd-quirurg espagn 325

Four cases of tertiary syphilis of the liver of the pseudo-murphy type the importance of pain in tertiary hepatitis D. DRUCKER H. F. FUCHS and P. ACO Loy Bull et mêm Soc méd d hôp de Par 923, xxxix, 595 [357]

- The surgery of gallstones of the liver. L. Moxr. *Rev. a. Med. (Chir.)* 10, 3, 227-231. 45
- A case in which an adenoma cystic, 10 cm. was successfully removed from the liver, with remark on the subject of partial hepatectomy. G. C. T. *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, Sect. Surg. 41
- Primary carcinoma of the liver removed by operation. G. W. *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, Sect. Surg. 56
- A case of resection of the liver for malignant disease spreading from the gall bladder. C. I. *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, Sect. Surg. 40
- A case of extension of an adenoma of the liver, which had ruptured spontaneously causing internal hemorrhage. P. T. *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, Sect. Surg. 60
- A case of primary tumor of the liver removed by operation. F. *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, Sect. Surg. 6
- A case of lesion of the gall bladder. H. C. J. *Brit. M. J.* 9, 3, 1, 6
- Chronic cholecystitis simulating gastric aneurysm. W. W. *Br. J. Surg.* and P. A. *Gall. Surg. (Chir.)* 1913, 10, 80
- Chronic biliary fistula. Implantation of urea into the stomach. H. Lili. *Verh. Abt. Chir.* 3, 1913, 765
- Reurrence of biliary calculi eighteen years after cholecystectomy. S. *Brit. M. J.* and *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, Sect. Surg. 70
- A few points regarding the diagnosis and treatment of gall bladder disease. M. *Trans. N. York M. J. & Med. Rec.* 9, 3, 214, 640
- How shall we treat gall bladder disease? D. W. *Palmer. Cancer. J. M.* 9, 3, 214, 243 *Am. J. Surg.* 9, 3, 214, 40
- Surgery of the gall bladder. F. S. *J. Chir. Gynecol.* 1, 3, 214, 27
- Removal of the cholecyst. H. *Verh. Abt. Chir.* 3, 1913, 765
- The artificial common duct. L. *Schaller. Z. Chir.* 1913, 9, 3, 214, 47
- A new test for pancreatic efficiency and to the diagnosis of gall bladder disease and certain obscure dyspepsias. F. L. *Am. J. Surg.* and G. *Cancer. Med. J. Australia.* 3, 3, 214, 275
- The pancreatic functional test. G. *Cancer. Med. J. Australia.* 3, 3, 214, 275
- Pancreatic cyst. L. W. *North. Ky. M. J.* 9, 3, 214, 275
- Acute or chronic pancreatitis. preliminary stage of acute necrosis of the pancreas. H. *Verh. Abt. Chir.* 3, 1913, 765
- The differential diagnosis of pancreatic diseases. J. L. *A. Fritz. Deutsche M. W. Verh.* 1913, 214, 275
- Pancreatic diseases. M. *Schaller. Z. Chir.* 1913, 9, 3, 214, 47
- Geb. d. Röntgenstrahlen. 9, 3, 214, 275
- Solitary adenoma of the pancreas with necrosis deposition. P. *Proc. Roy. Soc. Med. Lond.* 9, 3, 214, 275
- The diagnosis of spleen function. M. H. *Am. J. M. Sc.* 9, 3, 214, 275
- Experimental research upon the importance of the spleen in the production of agnostosis. A. *Verh. Abt. Chir.* 3, 1913, 765
- The effect of splenectomy on the hematopoietic system of anemic rabbits. F. B. *Verh. Abt. Chir.* 3, 1913, 765
- Transverse rupture of the normal spleen. E. C. *Verh. Abt. Chir.* 3, 1913, 765

- The splenectomy of hepatic carcinoma. H. *Verh. Abt. Chir.* 3, 1913, 765
- Malateral splenectomy and its complications. O. *Verh. Abt. Chir.* 3, 1913, 765
- Splenic aneurysm. clinical and pathological study of sixty new cases. R. C. *Chir. Am. J. M. Sc.* 1913, 214, 275
- The nature of Banti's disease. its differentiation from other types of splenectomy and its relation to idiopathic non-alcoholic progressive hepatic carcinoma in children and young persons. F. P. *Verh. Abt. Chir.* 3, 1913, 765
- A case of familial hereditary splenectomy treated by splenectomy. E. S. *Verh. Abt. Chir.* 3, 1913, 765
- Splenectomy for hereditary jaundice. I. *Verh. Abt. Chir.* 3, 1913, 765
- The surgery of splenic aneurysm. R. H. *Verh. Abt. Chir.* 3, 1913, 765
- Splenic aneurysm. (case after splenectomy). R. T. *Verh. Abt. Chir.* 3, 1913, 765

Miscellaneous

- An abdominal lymphosarcoma with multiple metastases. clinical, anatomic, and histological. J. *Verh. Abt. Chir.* 3, 1913, 765
- The pleura as the seat of tumor invasion of the diaphragm. A. *Verh. Abt. Chir.* 3, 1913, 765
- Examination of the diaphragm. report of an instance and discussion of the clinical aspects of the process. H. O. *Verh. Abt. Chir.* 3, 1913, 765
- Congenital diaphragmatic hernia. J. *Verh. Abt. Chir.* 3, 1913, 765
- Examination of the diaphragm. D. D. *Verh. Abt. Chir.* 3, 1913, 765
- Diaphragmatic hernia. non-traumatic. report of four original cases. J. H. *Verh. Abt. Chir.* 3, 1913, 765
- Diaphragmatic hernia. G. *Verh. Abt. Chir.* 3, 1913, 765
- Diaphragmatic hernia. A. T. *Verh. Abt. Chir.* 3, 1913, 765
- The differential areas of the abdomen. G. *Verh. Abt. Chir.* 3, 1913, 765
- Early diagnosis of the more common upper abdominal conditions. J. B. *Verh. Abt. Chir.* 3, 1913, 765
- The diagnosis of acute surgical diseases of the upper abdomen. R. F. *Verh. Abt. Chir.* 3, 1913, 765
- Upper abdominal disease in relation to anesthesia. M. *Verh. Abt. Chir.* 3, 1913, 765
- General strategy in an adjunct to local anesthesia in abdominal surgery. R. F. *Verh. Abt. Chir.* 3, 1913, 765
- Diagnosis in intra-abdominal infection. A. *Verh. Abt. Chir.* 3, 1913, 765
- Three cases of thoracic abdominal disease. F. *Verh. Abt. Chir.* 3, 1913, 765
- A rosette needle in the abdominal cavity. R. O. *Verh. Abt. Chir.* 3, 1913, 765
- Carcinoma. with especial reference to the alimentary tract. W. E. *Verh. Abt. Chir.* 3, 1913, 765

GYNECOLOGY

Uteru

- Congenital absence of the uterus and vagina: report of case. G. J. FARRER. *J Am M Ass* 9 3 1933, 16 6.
- The hist. history of the double uterus. J. O. POLAK. *N York State J M* 923 xxiii, 7. [362]
- Ingernal hernia of the uterus. F. S. LATIMER. *Arch ital de chir* 923 vii 30.
- A note on the relative merits of operations on the round ligaments for retroversion of the uterus. J. H. FRINGWORTH. *Edinburgh M J* 9 3 1933, 3. *Edin burgh Obst Soc* 8.
- Remarks on the diagnosis and treatment of uterine retroflexions. C. H. D. VAN WISSEMAN. *M J* 923 xxi.
- Rupture of the uterus after operation for terine scapismus. A. B. SPALDING. *Surg Clin N Am* 923 xii 70.
- The Kueland operation for prolapsed uteri. H. J. BOBART. *Surg Gynec & Obst* 923 xxvii 74. [363]
- A congenital deformity of the posterior lip of the cervix. H. R. SPENCE. *J Obst & Gynec Brit Emp* 9 3 xxi, 202.
- Intense dysmenorrhea. W. B. BELL. *J Obst & Gynec Brit Emp* 923 xxx, 9. [363]
- The treatment of dysmenorrhea. L. G. PHILLIPS. *Med Press* 9 3 cv 409.
- The practical management of dysmenorrhea. S. R. MEXNER. *Boston M & S J* 9 3 clxxviii 000. [363]
- The treatment of chronic metritis by carbon dioxide. L. BLAUER and R. RAUZY. *Rev franc de gynéc et d'obst* 9 3 xvii 30.
- A plea for the eradication of chronic endocervicitis. J. O. CLARK. *Illness M J* 9 3 xliii 404.
- Radium in the treatment of terine hemorrhage: 11th report upon forty-five cases. S. FORDRICK. *Lancet*, 9 3 cv 300.
- The treatment of severe and persistent terine hemorrhage by radium: 11th report upon fifty-five cases. S. FORDRICK. *Proc Roy Soc Med Lond* 9 3, xi, Sect Obst & Gynec 69. [365]
- A case of calcified bodies in the uterine cavity. H. L. MURKIN. *J Obst & Gynec Brit Emp* 9 3 xxx, 220.
- A cervical fibroid showing vein opening into the cervical canal. B. WITTENBERG. *J Obst & Gynec Brit Emp* 923 xxx.
- Hierding fibroids and radiation. P. BILCOVIC. *Gynec et obst* 9 3 309.
- Separation of uterine fibroids. L. HIRSHFELDER. *Russ gynec obstet pediat med gaz* 9 3 xvii 58.
- The treatment of uterine fibroids: operation or radiation. W. F. BAI. *N Brit M J* 9 3 005.
- A uterine tumor formed of pedunculated subperitoneal fibromyoma developed at the expense of the uterine cervix. L. FILLIAT. *Bull et mém Soc anat de Par* 923 xxi 368.
- Section of curettings. H. BILCOVIC. *Proc Roy Soc Med Lond* 9 3, xi, Sect Obst & Gynec 0.
- Hysterectomy and oophorectomy for benign tumors and supporting disease in the ovary. G. P. LA ROY. *Virginia M Month* 923 50.
- Late complications of simple subtotal hysterectomy for fibroma: cancer of the body of the uterus. THOMAS. *Lancet* 9 3, xi, 30.

Chorion epithelioma of the terine wall. S. G. LUKER. *Proc Roy Soc Med Lond* 923, xvi, Sect Obst & Gynec 67.

General principles of treatment of cancer of the uterus. CARMAN. *Arch méd belges*, 923 lxxvi, 3 3.

Histologic pictures representing the cure of uterine basocellular epithelioma. F. DAVIS. *Arch Radiol & Electrotherapy* 9 3 xxviii. [367]

T cases of cancer of the body of the uterus with secondary growths in the vulva and vagina. H. SPENCE. *J Obst & Gynec Brit Emp* 923 xxx, 97.

A case of epithelioma of the cervix in nullipara of 3 years. G. RIV. LAJOIE. *Bull et mém Soc anat de Par* 9 3, xxi, 266.

Carcinoma of the cervix: terine pathological and clinical study with particular reference to the relative malignancy of the neoplastic process as indicated by the predominant type of cancer. A. H. MARSHALL. *Bull Johns Hopkins Hosp Balt* 923 xxvii 4. 84. [366]

Cancer of the cervix uteri. W. P. GRAVER. *Boston M & S J* 9 3 clxxviii, 006.

The treatment of cancer of the cervix of the uterus. L. MALLAT. *Presse med Par*, 9 3 xxi, 289.

What constitutes the surgical cervix? J. O. POLAK and G. W. PHELPS. *Am J Obst & Gynec* 923 640. [367]

Radium as an adjunct to surgery in the treatment of terine conditions. W. P. FITE. *J Oklahoma Stat M Ass* 9 3, xvi, 8.

A series of secondary leiomyosarcoma following subtotal hysterectomy. A. C. PALMER. *Proc Roy Soc Med Lond* 9 3, xvi, Sect Obst & Gynec 6.

A leiomyosarcoma of fibromyoma removed by subtotal hysterectomy. E. HOLLAND. *Proc Roy Soc Med Lond* 9 3, xvi, Sect Obst & Gynec 64.

T specimens of sarcoma of the uterus. J. D. BARRIN. *Proc Roy Soc Med Lond* 9 3, xvi, Sect Obst & Gynec 65.

Adrenal and Peri Uterine Condition

Cytic inflammatory disease of the adrena. J. POWELL. *Rev espan de chir* 923 6 5.

Transverse tumefaction erosion of the uterus in bilateral inflammatory conditions. O. BRUNTON. *Gynécologie* 9 3, xxi 65.

Spontaneous contractions of the fallopian tube of the domestic pig with reference to the oestrous cycle. D. L. SECKINGER. *Bull Johns Hopkins Hosp Balt* 9 3 xxvii 36.

A case of hernia of the vulva. JEA. KERRY and DAX. *Bull et mém Soc anat de Par* 9 3, xxi, 14.

A case of strangulation of normal fallopian tube and ovary. H. L. MURKIN. *J Obst & Gynec Brit Emp* 923 xxx.

The relation of pain in lesions of the fallopian tube. M. MARCIS. *Brit M J* 9 3, 4, 85. [367]

Tuberculous hyperplasia of the tube stimulating cancer. DINE and A. KILM. *Bull et mém Soc anat de Par* 9 3, xxi 200.

Primary chorionepithelioma of the fallopian tube. S. SOTOMONOS and E. C. SMITH. *J Obst & Gynec Brit Emp* 9 3 xxx, 6.

Autoplastic ovarian transplantation. J. H. N. TIERNEY. *Brit M J* 923 4, 05. [367]

- Ovarian cysts in children: report of cases B C MALLIE South M J 9 3, xvi, 466.
- Intestinal occlusion with cystic disease of the ovary A J BROWNE Bol de la Soc de obst y gynec de Buenos Aires, 1923, 8, 73.
- Intraperitoneal rupture of unincised cyst of the ovary H MONROE and R BOUGHARD Bull et mémo Soc anat de Par 1923, xxix, 35.
- Tuberculosis of the ovary and pregnancy V UTEV Gynec et obst 9 3, vii, 93.
- Fibroma of the ovary with an account of case A W OWEN Lancet, 9 3, cccv.
- Hypernephroma of the right ovary in child W A DOWNES Ann Surg, 19 3, lxxvii, 758.
- Follicular cancer of the ovary M R ROSENBERG Am J Obst & Gynec, 9 3, 58.
- Papillary adenocarcinoma of the ovary, with permeation of the great vessel of the heart H J C GIBSON and G M FINDLAY J Obst & Gynec Brit Emp 9 3, xxi, 304.

External Genitalia

- Cyst of the vulva J P TOCHANEV Bull et mémo Soc anat de Par 9 3, xxix, 348.
- Vaginal repair: leucine suspension T W LYNN Brit Clin N Am, 19 3, ix, 195.
- Cloacostomy of the vagina, the formation of partition H HARTMAN Gynec et obst 9 3, vii, 4 3.

- A case of obliteration of the upper two-thirds of the vagina after puerperal eclampsia Gynec et obst, 9 3, vii, 4.
- Anomalous of the vaginal wall H RUSCH Proc Roy Soc Med Lond 9 3, xvi, Sect Obst & Gynec, 6.

Miscellaneous

- The effects of physical exercise on menstruation B CLON Lancet, 1923, cccv, 16.
- Gastrostomy in its relation to gynecology K C MEAS Boston M & S J 19 3, cxxxviii, 1037.
- Primary sterility A J ROYER Am J Obst & Gynec 9 3, 631.
- Acute pelvic problems L DREYER J Michigan State M Soc 9 3, xxi, 873.
- Tuberculosis of the prostate, with review of the literature B SOLOMONS Surg Gynec & Obst 1923, xxvii, 777.
- Electrotherapy in gynecological practice E C TERRY Am J Obst & Gynec, 9 3, v, 647.
- A consideration of the relative values of radium, deep X-ray therapy and surgery in the treatment of pelvic neoplastic conditions E T NEWELL Internat J Surg 9 3, xxvii, 9.
- The end results of the X-ray treatment of cancer of the Freiburg University Gynecological Clinic, 19 3-1916 K. BERNHARD Strahlentherapie, 9 3, xiv, 446. [1916]

OBSTETRICS

Pregnancy and Its Complications

- Pre-partum care with special reference to the value of an early diagnosis and treatment of certain complications T B SELLERS and D C McBRIDE South M J 9 3, xvi, 473.
- Death during pregnancy H F D V Boston M & S J 9 3, cxxxviii, 904. [1919]
- Pregnancy and labor in very young and elderly primiparae P F WILLIAMS Atlantic M J 9 3, xxi, 496. [1919]
- The pathologic reaction of tissue extract (cytol) liberated in pregnancy F B TURCK Am J Obst & Gynec, 9 3, 39. [1919]
- A new obstetrical table E L CORVILL Am J Obst & Gynec 9 3, 637.
- The duration of pregnancy in its medicolegal aspect T W ENER Lancet, 19 3, cccv, 199.
- An obstetrical case presenting an unusual group of complications L E PARKER Boston M & S J 1923, cxxxviii, 943.
- Acute rotation of the gravid uterus E ZILS DE ESMAZAS Med, 9 3, xxi, 39.
- Incarceration of the gravid uterus F LECHE Arch de med, chir, y espec, 9 3, xi, 22 de la Soc gynec esp, 63.
- Nephrothorax complicating pregnancy A P HEINACK Illinois M J 9 3, xlii, 44.
- Heart disease in pregnancy A L ROSENBERG J Obst & Gynec Brit Emp 19 3, xxi, 7.
- Heart disease in pregnancy W B BRIDG and P D WHITE Boston M & S J, 19 3, cxxxviii, 934.
- Notes on the problem of heart diseases in pregnancy B E HAMILTON Boston M & S J 9 3, cxxxviii, 987.
- Note on case of pericardioconal peritonitis: the eighth month of pregnancy B M DICK Edinburgh M J 9 3, xxi, T Edinburgh Obst. Soc 97.

- The pathologic anatomy of auto-intoxication in pregnancy and childbirth F HUBNER Surg Gynec & Obst 9 3, xxvii, 767.
- Tetanus of pregnancy H E DYER, Haharman Month 1923, lvi, 385.
- Placenta previa N F PARKER Haharman Month 1923, lvi, 369.
- Therapeutic abortion L C RUSSELL Kentucky M J 9 3, xxi, 905.
- The technique of artificial interruption of pregnancy G LEVI Riv gynec obstet pediat. and gen 19 3, xxi, 54.
- The diagnosis of fetal pregnancy: normal pregnancy E DOU and R ROCHA Gynec et obst, 9 3, vii, 16. [1919]

- The symptoms and signs of extra uterine pregnancy at or near term with report of 1 case and the treatment of late ectopic gestation, together with review of the literature and records 1 case H F H YB and I W POTTER Am J Obst & Gynec 9 3, 601. [1919]
- A case of ectopic pregnancy of ovarian type C A CASTAÑO and A J KINSELL Bol de la Soc de obst y gynec de Buenos Aires 9 3, 73.
- A case of co-existing uterine and ectopic gestation J A BERRY Lancet, 9 3, cccv, 57.
- Ruptured extra uterine twin pregnancy co-existing with uterine pregnancy DETROCHEV Bull et mémo Soc anat de Par 9 3, xxix, 48.
- Total twins and tubal pregnancy L B AUST Surg Gynec & Obst 9 3, cxxxviii, 803.
- Pelvic operation for constriction of the cervix and infection of the uterus A J GILMOY Bol de la Soc de obst y gynec de Buenos Aires 9 3, 19.

Labor and Its Complications

- A new method of producing premature delivery and its indications PARACHE Sep 1921 19 3, lxx, 5 5.

Paradox labor R L RAYFORD Virginia M Month 933, 1, 32

Do pre-vent-day efforts toward the elimination of the second stage of labor constitute forward step in practical obstetrics? J O ARNOLD Therap Gaz 923, 88, xxxix, 305. [379]

A discussion of the factors influencing breech, cephalic, and transverse presentation L DODDIE Internat J Surg 93, 3, xxxvi, 805. [379]

Occiput posterior positions D DODDIE Brit M J 1933, xlii, 765

Version in obstetrics R T LA VAKE J Lancet, 1933, xlii, 39

Notes on three cases of contraction ring dystocia G FRIZGROVE J Obst & Gynec Brit Emp 93, 3, xxx, 308

A clinical study of asomabes in the period of dilatation during labor E GYNNAR Gynec et obst 93, 3, vii, 390

The extraction of the aftercoming head by the Smellie Vent method L BELLICH Gynec et obst 933, vii, 385

Contribution to the study of the low caesarian operation RIZA Rev franç de gynec et d obst 923, xviii, 57

Caesarian section and hysterectomy in patient with contracted pelvis and occiput posterior presentation H C E DONOVAN Med J Australia, 93, 4, 609

The technique of caesarian section B J CAMERON Proc Roy Soc Med Lond 93, xvi Sect Obst & Gynec 50. [371]

A note on the cases of caesarian section under spinal anesthesia with trophoblasts B WATKINSON and H FRATERSON Proc Roy Soc Med Lond 93, xvi Sect Obst & Gynec 55. [371]

The Schirmer clamp for the control of postpartum hemorrhage M P R CREE Virginia M Month 933, 1, 62

Puerperal m and Its Complications

The puerperium J PHILLIPS Practitioner 93, cx, 499

A study in puerperal morbidity E EVO Surg Gynec & Obst 93, xxxvi, 707

A case of complete inversion of the uterus occurring after labor H COHEN Lancet, 93, cx, 9

Acute puerperal inversion of the uterus R R FOOTY Brit M J 93, 4, 90

Pathology of the puerperium E S SYDNER Hahnemann Month 923, lviii, 376

The treatment of puerperal infections B P WATSON Edinburgh M J 93, 3, xxx, Sect Edinburgh Obst Soc, 63. [371]

The fatality of puerperal fever R DUFFIELD Lancet, 923, cxv, 364

Puerperal insanity R ARISTOTELIS-JONES Lancet, 923, cxv, 397

Newborn

The management and care of the premature infant J R SUTMAN Arch Pediat 1933, xl, 38

Differentiation of skin eruptions in the newborn L P HOWELL Ohio State M J 93, xxx, 47

The hemorrhoids of the newborn J N CHURCHMAN, E. Lancet, 93, cxv, 836. [371]

Intrapentonal infusion in infancy J H READING Hahnemann Month 93, lviii, 278

The importance of colostrum to the newborn infant A KUTNER and B RAYNER Am J Dis Child 923, xiv, 413

Miscellaneous

Progress in modern obstetrical methods E T RANSOM Hahnemann Month 93, lviii, 360

Problems of obstetrical practice W W CHAPMAN Canadian M Ass J 93, xii, 179

Conservative vs radical obstetrics R L DE VON MAYOR Boston M & S J 923, cxcviii, 8

The active principle of ergot and its application in obstetrics and gynecology M WETTERWALD Rev franç de gynec et d obst 93, xviii, 369

Birth control H R ANDERSON Practitioner 1933, cx, 4

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

The importance of the adrenal glands in the action of certain alkaloids C W EMMERTON and P C LLOYD J Lab & Clin Med 923, viii, 563

Malignant destruction of the adrenals in newborn infant from large bilateral hematomas L COMPTON and R TOLLER Bull et mêm Soc anat de Par 93, xciii, 170

A cyst of the right suprarenal capsule removed by operation H A BALL Vez Brit M J 93, 3, 496

A cyst of the adrenal gland A SZARY and F HENCKEN Bull et mêm Soc anat de Par 93, xciii, 30

Tuberculosis of the suprarenal glands in tuberculous peritonitis W RA Med J Australia 93, 4, 608

Suprarenal tumors—suprarenomata R G CABRERO Semina med 1933, xix, 747

A case of metastatic hypernephroma L SPENCER and F MASON Bull et mêm Soc de char de Par 93, xix, 735

A case of metastatic hypernephroma SPACKER and MASON Bull et mêm Soc de char de Par 1933, xix, 745

Aberrant adrenal cortex in the meso-epitax J P TOURNAUX Bull et mêm Soc anat de Par 93, xciii, 340

Malignant hypernephroma in children L HOAG Am J Dis Child 93, xiv, 44

Lacerated kidney due to indirect violence J C JEFFERSON Brit M J 93, 4, 953

Idiopathic nephralgia J T GERRARD and W A FROVIE South M J 93, xvi, 46

Double kidney D N EMMERTON TH Ann Surg 93, lxxvii, 490 53. [373]

A case of solitary kidney with two ureters CRYSTOV and TOURNAUX Bull et mêm Soc anat de Pa 93, xciii, 63

Diaphragmatic ectopy of the kidney C OVERLINO Bull et mêm Soc anat de Par 93, xciii, 392

The value of functional tests of the kidney in the diagnosis of unusual forms of renal tuberculosis P E DICKERT Presse med Par 93, xciii, 548

Indolence, an early and very dependable symptom of renal insufficiency G BAAR Northwest Med 923, xxi, 308

A useful urinary finding in the diagnosis of hydro-nephrosis and pyonephrosis J ROSENBLUM J Lab & Clin Med 93, 3, viii, 6

Chloride retention in experimental hydro-nephrosis V M KETTER and D S PULFORD, J J Exper Med, 1933, xxxvii, 75. [374]

Renal insufficiency in prostatic hypertrophy G DEUTZ
 v. v. Beitr. z. klin. Chir. 93, xxviii, 79 [350]
 The treatment of prostatic tumor with deep X-ray
 therapy P J GILBERT *Bull. M. J.* 93, xvi, 466
 Cancer of the prostate: diagnosis and treatment J I
 BRUCE *J. Missouri State M. Assn.* 923, xx, 19
 The treatment of carcinomas of the prostate with radium
 PARRY and WILLIAMS *J. d'urolog. med. et chir.* 93, xv, 5 [350]

The standardization of prostatectomy with reference to
 the recent modification of Young's technique F HIRSH
Surg. Clin. N. Am. 923, ix, 77

Prostatectomy from the standpoint of the general prac-
 titioner V J LARSON *Minnesota Med.* 93, 376
 Infection of the seminal vesicles in relation to systemic
 disease F W SUTHERLAND and J H MORSEHEAD *J. Urol.* 93
 ix, 337

Torsion of the spermatic cord: gangrene of the testicle
 without trauma E BUTLER *Surg. Clin. N. Am.* 923
 ix, 837

Torsion of the spermatic cord E L KIRBY, J C W
 COLLINGS, and M F CANNELL *J. Urol.* 923, ix, 50

Anatomical considerations in case of torsion of the
 spermatic cord M A CLAIRE and V ANDERSON *Bull. et mém.*
Soc. anat. de Par. 93, xxii, 66

Fibro-lipo-sarcoma of the spermatic cord T H KILLER
Surg. Gynec. & Obst. 93, xxxii, 795

Epididymitis of the epididymis A LAPORTE and A
 CLAY *Bull. et mém. Soc. de chir. de Par.* 93, xix, 70

Surgical treatment of epididymis tuberculosis G SOX
Acta chirurg. Scand. 93, i, 53

The development of non gonorrheal epididymitis A
 WITKOWER *Zentralbl. f. Chir.* 93, i, 89 [350]

New experimental data on the question of the seat of
 endocrine function of the testicle A LAPORTE *Endo-
 crinology* 923 [350]

Acute orchitis in childhood due to torsion of hydatid
 of Morgagni A MOUTIER *Presse méd. Pa.* 93, xxxi,
 435

A case of tuberculosis of the testis of pseudo-neoplastic
 type M ACLAIRE and V ANDERSON *Bull. et mém. Soc.
 anat. de Par.* 93, xxii, 66

Cancer of the testis in child of months A DUBOIS and
 J NORDON *Bull. et mém. Soc. anat. de Par.* 923,
 xxii, 303

Miscellaneous

The odor of urine E PITTARELLI *Riforma med.* 93,
 xxxi, 463

Urological diagnosis from the standpoint of the general
 practitioner L T PRICE *South M. & S.* 923, lxxxv
 3

The estimation of albumen in urine A J QUINN *J.
 Lab. & Clin. Med.* 93, iii, 65

Idiopathic urticaria reaction after Wilks's L ROEMER
Zachr. f. urol. Chir. 92, i, 77

The quantitative determination of bile pigment in
 urine G S ARICI *Polichin. Rome* 93, xxx, xxx
 part 68

Research on the choleliths E DOCHET *Presse méd.*
Par. 93, xxxi, 438

Hyperuricemia: study of the principal factors influence
 ing the retention of uric acid E J. DE V P CHRISTOL
 and S N KOUTCH *J. d'urolog. med. et chir.* 93, xv,
 249

The production of urinary calculi by the devitalization
 and infection of teeth in dogs with streptococci from cases
 of nephrolithiasis E C ROBINSON and J G MERRITT
Arch. Int. Med. 93, xxxi, 807

The antithesis of urogenital tuberculosis in tubercu-
 lous patient report of case V F MARSHALL and G W
 CARRISON *J. Am. M. Assn.* 93, lxxx, 844

Indications for treatment in chronic infections of the
 lower genito-urinary tract in men DRYMONS *Arch. méd.*
belges 93, lxxv, 360

Pre-cancerous and early cancerous lesions of the genito-
 urinary tract J R DILLON *California Stat. J. M.* 93,
 xxi, 148 [352]

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

The conflicting properties of perosteum and bone as
 delta for the constitution of bone P R KATZENBACH
Prog. de la clin. Madrid 93, xxv, 5

Osteomyelitis superficialis affecting 2 generations II
 J C GRIMON *Epidemiol. M. J.* 93, xix, 37

Longitudinal overgrowth of long bones A. SHARP *Surg.
 Gynec. & Obst.* 923, xxxi, 787

Report of case of Paget disease of the bones of osteo-
 sis deformans E ROWE *Cincinnati M. J.* 193, iv, 305

A case of osteitis deformans H W JONES and C T
 HALLA *Arch. Radiol. & Electrotherap.* 93, xxviii,
 7

Spontaneous exostosis of the long bones G H FERNSTEDT
Glasgow M. J. 93, xi, 273 [352]

Hemorrhagic osteomyelitis: report of case M STR
J. Am. M. Assn. 93, lxxx, 833

The morphology of the blood in pneumococcus infec-
 tion of bones and joints A A KORTLAND and Verhaas
Rev. Chir. Pirapod. Gyn. Puerodol. 9 [352]

The roentgenological diagnosis of bone tumors W R
 HETTINGER *U.S. Naval M. Bull.* 93, xliii, 679

Bone tumors: sarcoma: perosteal group. Over the type
 -benign ossifying periosteitis and osteoma J C BLOOM-
 CROFT *J. Radiol.* 93, ii, 9 [354]

Radiotherapy in the treatment of bone tuberculosis and
 other conditions J D SCHULTZ *J. Arkansas M. Soc.*
 93, xix, 6

Tuberculosis in bones and joints W A KENNEDY III
Ann. M. J. 93, xliii, 496

What the pediatrician should know about joint tubercu-
 losis F KIRBY *Arch. Pediat.* 93, xi, 30

Gonococcal arthritis in newborn male infant S G
 ROW *Canadian M. Assn. J.* 93, xii, 437

Röntgen gastro-intestinal studies of patients with
 chronic deforming arthritis R G T. LOST *Am. J. Roent.*
genol. 93, 424

Some less frequently considered portals of infection in
 arthritis and uritis E E IRVING *J. Am. M. Assn.* 93,
 lxxx, 899

Fibrous myeloma: its prevention and remedy A C
 HALLAR *Med. Times* 93, li, 45 [354]

The etiology and pathology of joint: nodular
 J MONTEN *Ann. Brigid. med.* 93, xxxi, 33

A clinical study of thirty cases of nodular dystrophy
 R V FENYAT *J. Bone & Joint Surg.* 93, 90 [354]

A congenital defect of the pectoralis muscles E B
 MORTLEY *Lancet* 193, ccc, 51

Sarcoma of the clavicle J F FINE *Am. Surg.*
 93, lxxvii, 774

Intra uterine perosteal sarcoma of the humerus W A
 CARRISON *Ann. Surg.* 93, lxxvii, 77

- Habitual ulnar deviation in cubitus varus and valgus
O SCHMIDT Zentralbl f Chir 1913, 1, 474
- A case of cubitus varus BERGHEIM Bull et mêm Soc anat de Par 9 3, xxix, 347
- Wounds of the front of the wrist J BLANC Chir y lab 1913, 4, 534
- Dupuytren's contraction of the palmar fascia A H TURRY Practitioner 1913, cx, 14 [185]
- Synovial inflammation of the tendon sheath of the hands and feet as an occupational disease E SATTLER Arch f klin Chir 9 3, cxix, 250
- A congenital osteochondroma of the first phalanx of finger R ZANOLI Chir d organ di movimento, 9 3, vii.
- Rupture of the dorsal spongyous on the first interphalangeal joint and the anatomy and physiology of the dorsal spongyous G HADCK Arch f klin Chir 9 3, cxix, 97
- A case of chondroma of the phalanx in the hand S J D BUXTON Proc Roy Soc Med Lond 1913, xvi, Clin Sect 37
- Cervical rib H BROWN and H W FLETCHER Surg Clin N Am 1913, vi, 65
- Occult cervical spine tumors A LITAL Bull et mêm Soc mêm d hôp de Par 1913, 31, xxxix, 700
- The lumbar transverse processes M I BIRKMAN Am J Roentgenol 1913, 1, 455
- Abnormalities of the fifth lumbar transverse processes associated with sciatic pain B H MOORE J Bone & Joint Surg 9 3, [185]
- Two cases of sacralization of the fifth lumbar vertebra BOTTICAU ROCHER Bull et mêm Soc anat de Par 1913, xxix, 223
- A case of chronic ankylosing arthritis of the spine NOVÉ JOSEPHIAN Lyon chir 9 3, xx, 54
- Pott's cancer successfully treated by passive congestion V S DELANY Practitioner 1913, cx, 455
- Pott's disease of the spine D POWELL Brit J Surg 9 3, 22
- Tuberculosis of the sacro iliac joint H C W NUTTALL Lancet, 19 3, cxv, 830 [184]
- Sacro-iliac arthritis obliterans E S BLAINE Am J Roentgenol 1913, 1, 80 [187]
- The diagnosis of hip disease, with cases illustrating common errors E D FROBER N Orleans M & S J 9 3, lxxv, 740
- On coxa plana and its causation M J VANCE J Bone & Joint Surg 1913, 195 [187]
- The true nature of osteochondritis or coxa plana F CALOT Bruxelles méd 1913, lx, 76
- Microscopic findings in juvenile arthritis deformans (Large Calvé Perthes osteochondritis deformans juvenile cutis) and comparative research on the epiphysis of the head of the femur with particular reference to the focus F J LANG Arch f path Anat, 9 3, cccxxx, 76
- Osteomyelitis of the femur with abscess cured without intervention or vaccination P HALLOPEAU Bull et mêm Soc de chir de Par 1913, xix, 71
- Traumatic lesions of the patella in child of years J MANDER and P BANVET Bull et mêm Soc anat de Par 1913, xxix, 246
- An apparently hereditary unknown disease of the patella S JOSEPHIAN Zuck f orthop Chir 9 2, xix, 8 [187]
- Erythema of the tibia G P GRUBBS Kentucky M J 9 3, xxi, 201
- The foot—a clinical lecture J A WITTER Canadian M Am J 9 3, xxi, 157
- The static of the human arch when subjected to body weight H L DUVV Mid Surgeon, 1913, lx, 567

- Limitation of flexion of the foot through shortened calf muscles and its non-surgical correction O F SCHWITZER Med Times, 1913, b, 38
- A case of supernumerary toe inserted in the heel S CRANF Chir d organ di movimento 9 3, 2, 300
- An anatomical and clinical study of metatarsus varus J MANDER and R MAMMART Bull et mêm Soc anat de Par 1913, xxix, 9

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- The obliteration of bone cavities in chronic osteomyelitis by free fat transplantation G R DUVV Minnesota Med 1913, vi, 379
- The ideal bone graft as determined by experimental investigations S L HAAS Surg Clin N Am, 1913, ix, 76
- Observations on the treatment of subacute and chronic arthritis with milk injections C DE COCKERY Ohio State M J 1913, xix, 46
- The treatment of contraction of muscles caused by local anæsthesia through free transplantation of muscles R GOCHRELL Dentsche Zuck f Chir 1913, cxviii, 66
- Primary oncoplastic tubulation of the antebrachial stump G D ADAMS Chir d organ di movimento, 1913, 1, 304
- A new sacro iliac support J M BERRY Surg Gynec & Obst 9 3, xxxvi, 835
- Transference of the crest of the ilium for scroen construction of the hip W C CAMPBELL South M J 1913, xvi, 259 [187]
- Two cases of bone graft for pseudarthrosis of the neck of the femur BIRMAN Lyon chir, 10 3, xi, 10
- Pseudarthrosis of the right knee, sliding graft, recovery P HALLOPEAU Bull et mêm Soc de chir de Par 1913, xix, 71
- Tendon transplantation in the lower extremity O L MILLER South M & S 9 3, lxxv, 308
- Compound osteomyelitis of the knee Canal Bull et mêm Soc de chir de Par 1913, xix, 709
- The treatment of tuberculous osteo-arthritis of the knee DUVVONCHET Bull et mêm Soc anat de Par 1913, xxix, 30
- Internal derangements of the knee joint new method of exposure A G T LINDER Lancet, 1913, cxv, 945 [184]
- Excision of the knee joint J F COW Surg Clin N Am 9 3, ix, 633
- The technique of knee excision and bone suture W I BALDWIN Surg Clin N Am 1913, ix, 7
- The treatment of the flex ankle parastrophic at throdosis A STEINER J Bone & Joint Surg 1913, 191 [187]
- Arthrodesis of the ankle T R DE BLAISE Rev opail de chir 9 3, 404 [181]
- The danger of large ca. sties in the treatment of tuberculous lesions of the calcaneum E SCHREIB and G VITTEY Bull et mêm Soc anat de Par 9 3, xxix, 36

Fractures and Dislocations

- The longevity of plates and other foreign bodies in the treatment of fractures of long bones M BRENNER At hentic M J 9 3, xxi, 585
- Bone grafts L BIRMAN Bruxelles méd 19 3, 2, 497 [181]
- Fractures in transplanted bone S L HAAS Surg Gynec & Obst 1913, xxxvi, 749

The technique of the operative reduction in old luxations of the shoulder L. BART J de chir 923, xxx, 145. [1992]

Four cases of fracture of the external condyle of the humerus reposition or removal H. L. ROCHER Rev d'orthop 923, xxx, 3.

Isolated fractures of the condyle of the humerus CLA. XLIV Rev de chir Par 93, xlii, 5.

The rational treatment of fractures of the upper end of the humerus report of end results J. W. SEEVER J Am M Ass 93, lxxv, 1603.

Viscous union of fracture of the humerus successful By treated with bone peg DENIAUX Bull et mêm Soc de chir de Par 93, xlii, 79.

Compound posterior dislocation of the elbow F. BUTLER Surg Clin N Am 93, lii, 83.

Wire circling of the olecranon by new method A. HAYECCART Arch franco belge de chir 93, xxvi, 90. [1992]

Fractures of the forearm W. H. COLE Minnesota Med 923, vi, 300.

Marginal fracture of the head of the radius G. FERR Bull et mêm Soc anat de Par 93, xxii, 8.

Epiphyseal fracture of the head of the radius G. FERR Bull et mêm Soc anat de Par 923, xxii, 30.

Fracture-dislocations of the carpal bones E. B. T. WICK Surg Clin N Am 93, lii, 74. [1992]

Dislocation of the semilunar bone H. A. LEBLANC Edinburgh M J 93, xxx, 244.

Subtotal ligation of the retrobulbar arteries TIGHEARI and VARGAS Bull et mêm Soc de chir de Par 93, xlii, 745.

Fractures of the base of the first metacarpal INCHERT and COTTALENGA Presse méd Par 923, xxxi, 573.

Traumatic lesions of the spine A. DIALLET Arch franco belge de chir 93, xxxi, 97. [1993]

Fractured spine consideration of the practical care and treatment W. C. G. KIRCHNER Surg Gynec & Obst 93, xxxv, 830.

Rupture of the bladder in fractures of the pelvis SAVY Lyon chir 923, xx, 363.

N 1es on the treatment of compound fractures of the extremities W. H. BYRON Biblôt I Leger 1922, 45.

The late results of the reduction of congenital dislocation of the hip E. E. ANDERSON Biblôt I Leger 1922, civ, 401.

Fractures about the hip joint C. C. CHATTERTON Minnesota Med 923, vi, 357.

Pathological fracture of the neck of the femur I. ZADIK Ann Surg 93, lxxvii, 689.

The autogenous peg graft in certain fractures of the femur W. M. KIRCHNER Br J 193, i, 558.

A preliminary report of a new method of treating fractures of the neck of the femur E. D. MARLEY and A. C. KIRCHNER N Orleans M J & S J 923, lxxv, 7.

Fractures of the femur in children C. G. BURNICK and I. E. SERRA Ann Surg 93, lxxvii, 750.

The treatment of fresh fracture of the shaft of the femur R. EARL Minnesota Med 93, vi, 383.

Congenital backward dislocations of the knee. HART MANN KIEFFEL Rev d'orthop 923, xxx, 305.

Non-operative treatment of displaced semilunar cartilage D. GRAHAM Ann Surg 93, lxxvii, 729.

Fractures near the ankle W. L. ESTER, Jr Atlantic M J 193, xlv, 59.

Tarsal luxation bloodless reduction E. DELATVOY Bull et mêm Soc anat de Par 93, xxii, 345.

Internal ligation of the great toe M. MOCHET and GUILLEMIN Bull et mêm Soc anat de Par 923, xxii, 34.

Orthopedics in General

Managing orthopedic cases M. CONSTANTINE and B. W. MOFF Transed Nurse & Hosp Rev 923, lxx, 403. [1993]

The treatment of inequality of length in the lower limbs N. D. RUTLEY Med J Australia 93, i, 76.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

The activity of the capillary blood vessels and its relation to certain forms of toxemia H. H. DALE Brit M J 93, i, 1006.

Pulmonary thromboembolism source of embolism in the general circulation C. OSTLEND Bull et mêm Soc anat de Par 923, xxii, 91.

Three cases of embolism P. HARGREAVES Up mû Lanchet Forth 93, xxvii, 307.

Four cases of ligation of the common carotid P. HARGREAVES Bull et mêm Soc de chir de Par 93, xlii, 774.

The left carotid system MUTTER and FOCKERT Bull et mêm Soc anat de Par 923, xxii.

Aortic aneurysm with spontaneous pneumothorax, report of case C. F. ANDERSON and H. W. RITA Ohio State M J 93, xxx, 397.

Aneurysm of the arch of the aorta associated with aneurysm of the common carotid artery M. RADY Canadian M Ass 93, xxi, 435.

Aneurysm of the abdominal aorta simulating duodenal syndrome C. LA. JR. and D. ROCHER Bull et mêm Soc méd d'hop de Par 923, xx, 66.

Calcareous degeneration of the dorsal and lumbar aorta as cause of backache J. RUSTON and E. J. BERKESZTER J Am M Ass 93, lxxv, 83.

Aneurysm of the common iliac artery gradual occlusion by ligation with free graft of muscle L. ELSTON Surg Clin N Am 93, lii, 68. [1993]

Double superior mesenteric artery E. DELATVOY Bull et mêm Soc anat de Par 923, xxii, 346.

The anatomy clinical aspects, and treatment of aneurysm of the superior mesenteric artery L. KOLIK Arch Clin Chir 923, cxviii, 684. [1993]

Thrombosis of the superior mesenteric vessels and obstructions of the small intestine D. H. ORZEL N York M J & Med Rec 93, cxviii, 695.

A case of thrombosis of the portal vein complicated by peritonitis and adhesive peritonitis HATTEGARD and SCHARF Bull et mêm Soc méd d'hop de Par 93, xx, 147.

A case of ruptured aneurysm of the splenic artery W. R. SMITH J Am M Ass 93, lxxv, 697.

Observations on thrombosis of the pelvis and lower extremities H. T. GARNER J Nat. M Ass 93, xv, 99.

Embolism as a method of treatment of disturbances of the circulation from embolism in the extremities E. KEY Lyon chir 93, xxi.

Aneurysm of the popliteal artery secondary to exostosis of the lower end of the femur C. CLAVELIN Bull et mêm Soc de chir de Par 93, xlii, 686.

A wound of the femoral artery and vein C. P. GROVER and D. FICKER Ann Surg 923, lxxvii, 84.

Trophic disturbances of the lower limb after ligation of the femoral artery P. BLOM Bull et méd Soc anat de Par 9 3, 1914, 170

Attention caused abscesses of the superficial femoral vessels from stab wounds BLATT BEATT and M. Bull et méd Soc anat de Par 9 3, 1914, 45

Rupture of the deep femoral artery in patient with aortic endocarditis J. MACVAIL Med J Australia, 9 3, 1914, 724

Contributions to the surgery of the blood vessels J. GOS. N. Med Times, 923, 49

Cann drainage tubes cause crushing of blood vessels L. SCHWARTZ and L. C. KID Arch f Clin Surg 1914, 43

Simultaneous ligation of vein and artery an experimental study B. MENON and A. A. MASTI J Am M Ass 19 1, 1914, 878

Blood and Transfusion

Investigations on the blood sugar in man. Conclusions of occlusions, rise, and distribution K. M. H. 49 Acta med Scand 9 3, 1914, 309

Studies on the bile and biliary diseases G. F. OLIVER Curcums J M 19 3, 1914, 96

The determination of bile salts in the blood S. TARKENT Curcums J M 9 3, 1914, 97

The relation between blood destruction and the output of bile pigment G. O. BROWN P. D. M. M. STELL and P. ROX J Super Med 9 3, 1914, 711

The technique of blood plate counting in man R. G. B. Lancet 9 3, 1914, 5

A series of cases of purpura hemorrhagica and aplastic anemia due to chronic biliary poisoning in common plant H. B. ANDERSON J. BO. D. and A. B. JACKSON Can dis M 1914, 923, 105

The inherited and constitutional pathology of hemophilia H. B. FR. Deutsche Zeitsch f Clin 1914, 100

Recent research on the blood groups J. MOUTON Presse méd Par 9 3, 1914, 54

On the inheritance of the specific non-mitochondrial substances of human red cells with note on the possible existence of lethal factor S. C. DYER, D. P. H. CROFT, and C. H. B. Proc Roy Soc Med Lond 923, 171 Sect Path 35

Transfusion of blood C. WILLS and Vernon M. Month 9 3, 1914, 63

A simple blood transfusion H. M. CLUTE Boston M & S J 9 3, 1914, 949

Observations on the transfusion of blood D. S. ADAMS Boston M & S J 9 3, 1914, 940

Anticoagulants L. L. BURKE Surg Gynec & Obst, 9 3, 1914, 18

The interval course of hemorrhage, with observation of blood transfusions and the development of shock from transfusion W. J. TOL. Clin Research 923, 19

Intraperitoneal transfusion with citrated blood chemical study D. M. STRIMM Am J Dis Child 1914, 20

Clinical and experimental research on blood transfusion L. A. SCHWARTZ Zentralbl f Gynack 9 3, 1914, 1045

The classification of blood diseases in childhood O. WAR. Brit J Child 1914, 9 3, 1914, 74

A case of lymphoma A. F. RIVALL, L. S. DICKSON and A. L. UOCH Lancet 9 3, 1914, 308

Studies upon the relation of trypsin bodies in the digestive tract to trypsin autolysis in the blood C. T. BROWNE and J. H. BULLER J Super Med 1914, 479

Lymph Vessels and Glands

Lymphatic clinical review and an attempt at its practical reproduction G. D. MURRY Am J M 9 3, 1914, 871

A syndrome in monkeys (cytotoxic lymphatic leukemia) similar to that which characterizes human lymphatic leukemia in man A. C. M. GALLIE J Lancet, 923, 1914, 777

Lancet 9 3, 1914, 36

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

The efficient surgeon R. BURNETT Surg Gynec & Obst 1914, 3, 1914, 70

Surgical judgment J. H. GIBSON Illinois M J 9 3, 1914, 424

The treatment of shotgun wounds C. H. BARNES South M & S J 1914, 305

Drainage G. P. M. FAS Internat J Surg 923, 1914, 24

The prevention of postoperative shock MINARDI Presse méd Par 9 3, 1914, 945

Hemorrhage and absorption of the shunt of the recti after laparotomy by Phasmodiel Jackson P. BOWMAN and L. MACDON. Presse méd Par 923, 1914, 477

A report on four cases of tetanus in children J. W. GRANTY R. SOUTHERN H. L. STOLZ and H. L. S. 1700 Med J Australia 1914, 535

Combination treatment of tetanus A. BULLIE Zeitsch f gerichtl Med 9 3, 1914, 477

Surgical treatment of bone scars G. W. PRINCE Surg Clin N. Am 9 3, 1914, 4

Anesthesia

Rapidly and general anesthesia J. D. MORRISON Med Press 1914, 474

General anesthesia in dental surgery W. J. McCLELLAN Proc Roy Soc Med Lond 1914, 171 Sect Anes.

Four hundred and fifty major operations under local anesthesia J. W. FR. Internat J Surg 923, 1914, 96

Methylene chloride in anesthesia R. BOE and R. L. STELL Canadian M J 1914, 1914, 47

Cases of difficulty due to important points in anastomosis moved at the preliminary examination A. L. HARRISON Proc Roy Soc Med Lond 1914, 171 Sect Anes 9

A case of cardiac arrest under an anesthetic followed by heart massage I. S. ROWLANDS Proc Roy Soc Med Lond 9 3, 1914, Sect Anes 5

Antiseptic Surgery; Treatment of Wounds and Infections

Static electricity in the treatment of non-infected inflammation W. B. GOWAN N York M J & Med Rec 9 3, 1914, 37

Wound diptheria C. ULMOY Arch f Clin Surg 9 3, 1914, 833

- Ethyl chloride as an anesthetic for minor operations in children S F ROSE Lancet, 9, 3, cvv 58
 Laryngeal intubation in anesthetics S ROXBOROUGH M Brit M J 9, 3, 4, 600
 The effects of nasal trauma on the anesthetized patient C L HUNTER Proc Roy Soc Med Lond 9, 3, xv Set 1925
 Local anesthesia O D KING US N A M Bull 19, 3, xxvi, 693

- A new local anesthetic A LACROIX Presse méd Par 9, 3, xxiii, 496
 Experiences with sphincter anesthesia E KUTSCHKA Lwenz Wien klin Wchnschr 9, 3, xxvii, 6

Surgical Instruments and Apparatus

- A new haemostatic forceps W B McWORTHER South M J 9, 3, xvi, 400

PHYSICO-CHEMICAL METHODS IN SURGERY

Roentgenology

- Stimulation and paralysis of animal cells by means of the roentgen rays II Experimental research on the growth bodies of rabbits and cats A MORRIS Strahlen therapie 9, 3, xv, 56
 Studies of the effect of the X ray on glandular activity A C I B H OUSCROFT A JACOBY and J E WATSON J Radiol 9, 3, iv 89 [398]
 Practical roentgen-spectrometry and its physical basis K S CHAN J Roentgenol 9, 3, 479
 Comparative measurements of intensity and hardness of X ray produced by different types of American transformers A BACHMANN J Radiol 9, 3, 1, 30
 Standardization of ionization measurements of interest T L WILKINSON and E T LUDLOW Am J Roent genol 9, 3, 483
 The technique of oral radiography C O SCHOEN Internat J Orthodont Oral Surg & Radiography 9, 3, ix, 47

- A review of the present status of deep roentgen therapy G HOUDESSON Am J Roentgenol 9, 3, 476
 Further observation on the use of high voltage X ray R H ALLEN South M J 9, 3, 437
 High voltage X ray therapy: an months experience S MORRIS South M J 9, 3, 490
 Our experience in the use of deep therapy 200 Likhovits and more D A KATZ and J P KATZ South M J 9, 3, 435
 Deep X ray therapy PRINCE Arch Radiol & Electro therapy 9, 3, xxx, 364 [395]
 The blood in deep roentgen ray therapy: hydrogen ion concentration, alkali reserve, sugar and non protein nitrogen I F HENDER and A J PLATTMAN J Am M Ass 9, 3, lxxv, 50 [399]

- The association of the X ray and the violet ray in the treatment of tuberculous deritis J SARDNA and R ROYUS Bull et sem Soc med d hop de Par 9, 3, 35 xxvii, 6

- Notes on 11 cases of erythema treated by the X rays E J STOUTEN Lancet, 9, 3, cvv 3

Radium

- Some dermatological and radiological observations C H BULL J Oklahoma State M Ass 9, 3, xvi, 85
 The use of radium in the treatment of disease D T M Brit M J 9, 3, 4, 464 [400]
 The problem of malignant disease, with special reference to radium therapy II M MORRIS Med J Australia, 9, 3, 63
 Radium and surgery W H B ARKENS Internat J Surg 9, 3, xxvii, 89 [401]

Miscellaneous

- Hebotherapy ad bello hygiene C W SALGREN Med Press 923, cvv 478
 Further indications for intensive hebotherapy H REAR Strahlentherapie 9, 3, xvi, 716 [401]
 Electrotherapy, or what the physician can do and should do for chronic J B G WADSWORTH J Michigan State M Soc 9, 3, xiii, 73
 Electrocoagulation and some of its uses T H PLA Am J Clin Med 9, 3, xvi, 403
 The treatment of certain forms of cancer by electrocoagulation J RICO Rept de med y chir 9, 3, xi, 50
 Surgical diathermy in its relation to radiotherapy G KOLCHESKY and H KATZ J Radiol 9, 3, iv, 76 [402]

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- Early and late lesions due to electric injuries O J F J Low Stat M Soc 9, 3, xii, 30
 Epithelial cyst of the finger BOWEN Bull et sem Soc med de Par 9, 3, cxiii, 41
 The treatment of leprosy W DONALDSON J de med de Bordeaux 923, cvv 5 [403]
 Hodgkin disease of the glands and pulmonary localization: apparently cured by deep radiotherapy J JACOB Bull et sem Soc med d hop de Par 1923, 34 xxvii, 669
 Diabetic gangrene and its treatment S WESTMAVY-Zsch J allg Allg Fortbild 9, 3, ix, 37 [403]
 Ganglionic neoplasia (growing from ganglia), vespa noma ulceration of the genitalia ulcerating granuloma of the paduade, etc M WERNER J Urol 9, 3, ix, 305

- T new synthetic antimony compounds in cases of glandular neoplasia A RANDALL J Urol 9, 3, 4, 49
 Basaloid plate tumors F L LUTHERS Surg Gynec & Obst 9, 3, xxvii, 85
 A consideration of known factors in the causation of neoplasms B T SIMPSON and H R GAYLORD Internat J Surg 1923, xxvii, 47
 Pathologic cartilaginous new growths A FORCARD and R LUTHERS Presse méd Par 9, 3, xxii, 56
 A congenital cystic macrocystic tumor F CHATEL Rev franç de gynéc et d'obst 9, 3, xviii, 364
 The coexistence of four different and independent tumors in the same patient ORSOLINO and VIGOR Bull et sem Soc med de Par 9, 3, xiii, 9
 Studies based on malignant tumor of the rabbit I The spontaneous tumor and associated abnormalities W H BROWN and L FRANK J Exper Med 9, 3, xxvii, 601 [403]

Studies based on malignant tumor of the rabbit III Intrastriular transplantation and clinical course of the disease W H BROWN and L PEARCE J Exper Med 935 xxvii, 799

Studies based on malignant tumor of the rabbit IV The result of miscellaneous methods of transplantation, with discussion of factors influencing transplantation in general L PEARCE and W H BROWN J Exper Med 935 xxvii, 8

The influence of inorganic salts upon tumor growth in Rous rats K SUZUKI and S R BENNETT J Cancer Research, 9 4, 320 [404]

Recent cancer therapy F C WOOD Canadian M Ass J 3 xvi, 5 [405]

The future surgery of cancer SCHMIDT Rev espal de chir 19 s, iv 476 [406]

Chorio-epithelioma in man T A WILK Bull et mémo Soc anat de Par 9 3 xxvi, 355

The major infections W J MAYO J Iowa State M Soc 9 3 xiii, 33

A case of hydatid disease H C IYER and J RANNEY Lancet, 1923, cclv 7

Ductless Glands

The present status of endocrine therapy B A CORRE Atlantic M J, 9 s, xvi, 603

A appraisal of endocrinology A G HOSKING North-west Med 9 3, xiii, 37

Surgical Pathology and Diagnosis

The significance of the Widal's agglutination reaction in tuberculous, with report of 100 cases M S LEWIS Am J M Sc 19 s, cliv 890

Experimental Surgery

The action of serum on fibroblasts in vitro A CARRIL and A H FERNAN J Exper Med 19 s, xxviii, 757

Hospitals; Medical Education and History

Fly traps for hospital kitchens Transl Nurse & Hosp Rev 9 3 lxx, 527

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G., C.B., Leeds
PAUL LECÈNE, Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED Gynecology and Obstetrics	JAMES P. FITZGERALD Surgery of the Eye
LOUIS E. SCHMIDT Genito Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
PHILIP LEWIN Orthopedic Surgery	Nose and Throat

CONTENTS

I. Authors	H
II. Index of Abstracts of Current Literature	III
III. Editor's Comment	x
IV. Abstracts of Current Literature	427 508
V. Bibliography of Current Literature	509 528

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Offices 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain Baillière, Tindall & Cox, 8 Henrietta St. Covent Garden, London, W. C.

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Alden, A. M., 432
 Allgöwer, E. D., 433
 Andersson, E. L., 494
 Appelman, P. F., 43
 Aschner, P. W., 460
 Ballance, H. A., 476
 Bastianelli, P., 44
 Beberndt, M., 493
 Benedict, C. G., 436
 Benedict, F. G., 436
 Berkheimer, E. J., 496
 Benich, R., 906
 Blackburn, C. B., 45
 Bhar, V. P., 427, 500
 Biss, E. P., 437
 Brack, A. L., R., 457
 Brandt, J. W., 459
 Broad, W. B., 471
 Brooks, B., 407
 Broster, L. R., 430
 Brown, L. E., 436
 Brown, H., 487
 Burch, L. E., 499
 Burdick, C. G., 494
 Bursillo, A., 501
 Calvert, R. C., 476
 Cameron, G., 464
 Campbell, D. G., 471
 Chaney, W. C., 465
 Chocholski, E. F., 493
 Clark, A. J., 507
 Cline, B., 470
 Cole, L. G., 453
 Cordes, F. C., 43
 Corcoran, J. A., 456
 Cowan, J. F., 490
 Craig, W. M., 459
 Cunningham, R. S., 430
 Conley, C. W., 43
 Cotler, E. C., 430
 Dandy, W. E., 436
 DeGurecovich, F., 469
 Delaney, E., 469
 DeBett, 458
 DeBora, X., 476
 Deslonnes, P., 497
 Dietter, T., 498
 Donnan, G. M., 489
 Douglas, J., 496
 Dowd, C. V., 452
 Duval, C., 478
 Dunn, G. R., 450
 Dwyer, H., 434
 Eakorn, M., 463
 Eno, E., 474
 Farr, C. E., 506
 Fay, O. J., 506
 Fletcher, H., 454, 458
 Fisher, W. H., 462
 Fisk, T. L., 498
 Fleming, H. W., 487
 Fraenkel, E., 474
 Frank, L. W., 437
 Fraulax, C., 46
 Frank, F., 507
 Franklin, W. B., 43
 Friedmann, J., 456
 Gallo, W. E., 453
 Gifford, R. R., 430
 Gerode, 458
 Gindoff, A., 476
 Glass, E., 496
 Glavin, O., 450
 Glover, S. R., 435
 Goss, E., 448
 Goss, A., 445
 Gottlieb, A., 439
 Gottlieb, P. F., 505
 Gouldsborough, C., 488
 Gross, A., 473
 Grubel, P., 444
 Gullerum, A., 469
 Guyot, J., 477
 Haas, S. L., 492, 508
 Haider, R. L., 455
 Hagstrom, P., 497
 Hamman, B. E., 471
 Harpaz, P., 449
 Harbitz, F., 47
 Hartman, G. W., 481
 Hartmann-Keppel, G., 47
 Hashimoto, T., 44
 Hagedorn, Z., 430
 Heale, 445
 Hewer, C. L., 504
 Hewer, H. F., 499
 Hoffmann, A. H., 463
 Howarth, W. G., 434, 435
 Hubbard, R. S., 437
 Hutchins, R. W., 487
 Jacobson, H. C., 448
 Jacobs, H. G., 438
 Jeff, H. L., 476
 Johnson, G., 477
 Johnson, G. J., 443
 Johnson, E. L., 503
 Joy, J. B., 479
 Jones, D. F., 459
 Jones, J. B., 47
 Kayser, K., 490
 Kerppola, W., 443
 Keryn, G., 441
 Kidd, F., 46
 Knepper, R. L., 485
 Knight, A. C., 474
 Kohnst, E., 480
 Kovacs, R., 505
 Kutscha-Lumberg, E., 50
 Labey, F. H., 437
 Latta, J. S., 430
 Latta, P. S., 467
 Layton, T. B., 432
 LeMouster, A. B., 45
 Leonard, C., 47
 Leonard, R. D., 463
 Lepore, 455
 Levant, 473
 Levine, S. A., 430
 Levy, W. H., 434
 Lewis, D., 443
 Lewis, J. D., 433
 Lewis, H., 44
 Lochman, C. D., 467
 Lockhart-Munro, J. P., 46
 Lodge, S., 43
 Lodge, W. O., 41
 MacCarty, W. C., 459, 477
 MacKenna, A. R., 434
 Macoun, J. A. H., 477
 Mallet, L., 468
 Marano, D., 476
 Martin, E. D., 494
 Martin, K. A., 497
 Matoley, G., 498
 McGuire, F. W., 448
 Manner, J. G., 483
 Mercer, W., 490
 Miller, O. L., 49
 M'Intosh, H., 433
 Moore, S., 486
 Morot, R., 459
 Mouchet, 455
 Muench, G. E., 450
 Muller, G. P., 445
 Nardum, W. H., 430
 Nather, K., 507
 Nixon, C. E., 44
 Nussberger, L., 498
 Odell, T. H., 43
 Olive, C., 476
 Oliver, S. F., 454
 Ortol, V., 507
 Orr, T. G., 433
 Owen, H. R., 448
 Padgett, E. C., 437
 Perkins, J. F., 430
 Patterson, D., 44
 Patterson, N., 435
 Pfahler, G. E., 447, 504
 Phanco, L. E., 475
 Phillips, J., 473
 Picard, H., 504
 Pierce, G. W., 50
 Pichia, A. J., 451
 Pickett, B., 485
 Portis, 473
 Quack, D., 434
 Quinby, W. C., 477
 Rabino, R., 430
 Radlow, J., 496
 Rabinsky, E. C., 455
 Rocket, 479
 Roedman, E., 483
 Rooley, A. J., 470
 Rose, S. R., 503
 Rossow, E. C., 454, 482
 Ruge, C., 507
 Schuster, O. F., 488
 Sever, J. W., 493
 Shackleton, W. L., 495
 Shaw, W. F., 469
 Silver, D., 491
 Simons, A., 508
 Sims, I. E., 494
 Sowerdine, G., 45
 Spiegel, N., 501
 Stancu, K., 501
 Standler, A., 460
 Stevens, A. R., 480
 Tebbins, S., 464
 Tjor, R. G., 487
 Thier, 479
 Thomson, St. C., 43, 433
 Tromsdaal, P. E., 497
 Turner, G. G., 46
 Turner, P., 45
 Vaccaro, C., 454
 Vail, D. T., 43
 Vantura, 468
 Volkman, J., 454
 Walker, F., 48
 Ward, G., 454
 Webb, C. W., 437
 Weber, F. P., 430
 Weil, A. J., 458
 Weiss, E. D., 434
 Whiston, H., 457
 White, F. D., 47
 White, F. F., 450
 Wolf, K., 507
 Woodman, E. M., 438
 Wright, G., 46
 Zanger, C., 480
 Zorppel, H., 484

CONTENTS—NOVEMBER, 1923

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

Head	
BLAIR, V. P. and PADGETT, E. C. Prostatic Infection of the Parotid Glands and Ducts	47
WOODS, V. E. M. Malignant Disease of the Upper Jaw With Special Reference to Operative Technique	458
HERZBERG, Z. The Rebuilding of the Alveolar Processes by Bone Transplantation	459
Eyes	
WHEELER, F. P. A Case of Exophthalmos Probably Caused by Non Suppurative Cavernous Sinus Thrombosis	459
GIFFORD, S. R. and LAYLA, J. S. Pseudo Glaucoma, Vascular Tumor of the Lens	459
RENA VALERO, R. R. Orbital Cellulitis as Related to Nasal Sinusitis	459
NANDORF, W. H. and CURRYINGHAM, R. S. Familial Retrocerebral Degeneration	459
APPLEMAN, L. F. Papillitis with Focal Infection	459
CUTLER, C. W. Diseases of the Optic Nerve and Its Relations to the Posterior Nasal Sinuses. A Report of Four Cases Showing the Uncertainty of the Diagnosis	459
THOMSON, S. C. Optic Neuritis of Sphenoidal Sinus Origin. Operation Cure	459
VAIL, D. T. Concerning the Surgical Treatment of Gliomata, with Special Reference to Modified Elliot LaGrange Technique	459
LOOGE, S. and LOOGE, W. O. Herpes Zoster Ophthalmicus	459
FRANKLIN, W. B. and CORCORAN, F. C. Lupus Vulgaris with Ocular Extension	459
Ear	
OSWALD, T. H. Otitis Media, Mastoiditis and Diseases of the Nasal Accessory Sinuses as Causative Factors in Malnutrition in Children	459
LAYTON, T. B. The Treatment of Acute Otitis Media in Children	459
ALLEN, A. M. Myringotomy from the Standpoint of the Pathology of Early Otitis Media	459
Nose	
RENA VALERO, R. R. Orbital Cellulitis as Related to Nasal Sinusitis	459
CUTLER, C. W. Diseases of the Optic Nerve and Its Relations to the Posterior Nasal Sinuses. A	459

Report of Four Cases Showing the Uncertainty of the Diagnosis	459
THOMSON, S. C. Optic Neuritis of Sphenoidal Sinus Origin. Operation Cure	459
LAYLA, J. D. Depressed Nasal Deformities. A Comparison of the Prosthetic Values of Paraffin, Bone, Cartilage and Celluloid, with Report of Cases Corrected with Celluloid Implants by the Author's Method	459
ALLGATHER, E. D. Headaches of Sinus Origin	459
THOMSON, S. C. and M'INTOSH, C. H. Mucocoele of the Frontal Sinus	459
HOWARTH, W. G. A Radical Frontal Sinus Operation	459
MACKENZIE, A. R. and WELLS, F. D. Sarcoma of the Ethmoid	459
DUTROW, H. V. Some Further Observations on the Etiology and Treatment of Maxillary Sinusitis	459
PATTERSON, N. Diathermy for Malignant Diseases of the Mouth, Pharynx, and Nose, with Notes on Seventeen Successful Cases	459
Mouth	
QUICK, D. Carcinoma of the Floor of the Mouth	459
PATTERSON, N. Diathermy for Malignant Diseases of the Mouth, Pharynx, and Nose, with Notes on Seventeen Successful Cases	459
Throat	
HOWARTH, W. G. and GLOVER, S. R. Unhealthy Tonsils Associated with Cervical Adenitis	459
PATTERSON, N. Diathermy for Malignant Diseases of the Mouth, Pharynx, and Nose, with Notes on Seventeen Successful Cases	459
BROWN, L. E. The Relation Between Thyrotoxicosis and Tonsillar Infection	459
Neck	
BENNETT, C. G. and BENNETT, F. O. A Permissible Breakfast Prior to Basal Metabolism Measurements	459
BROWN, L. E. The Relation Between Thyrotoxicosis and Tonsillar Infection	459
FRANK, L. W. The Surgery of the Toxic Thyroid	459
BOSS, E. P. Cardiac Disorders Accompanying Exophthalmic Goiter	459
LARKY, F. H. A Technique of Thyroidectomy	459
NEUBARD, R. S. and WELLS, C. W. Acetabular Following Thyroid Operations	459

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings Cerebral Nerves

- ROUSSEAU, F. C. Spinal Cord Treatment of Epileptic (Lethargic) Epilepsia: Further Results 435
- JACOBI, H. G. A Case of Cerebral Cyst in an Infant 438
- PARKINSON, J. P. and BARNETT, L. R. A Case of Cerebral Abscess in a Child 439
- DIXON, W. F. A Method for the Localization of Brain Tumors in Comatose Patients (The Application of Compressing Net over the Cerebral Ventricles and the Introduction of Air (Ventricular Distention)) 439
- HANSEN, T. The Absorptive Power of the Subarachnoid Space 44
- LEWIS, H. and NOBLE, C. E. Dyspareunia and Epilepsy 44
- BASTIANELLI, P. The Frontal Method of Schloffer: Direct, brief Examination of the Orbit: A Contribution to the Possibility of Relating Exploration of the Base of the Brain 44
- FITZPATRICK, D. Tuberculous Meningitis 44
- JENNINGS, G. J. Otic Meningitis 44

Spinal Cord and Its Coverings

- KEPPNER, W. F. The Retention of Serum over the Sacral Nerve Roots of a Case in the Differential Diagnosis of Spinal Cord Lesions 443

Peripheral Nerves

- FRANK, D. Some Peripheral Nerve Problems 443
- GUTHRIE, P. Lat. Paralysis of the Ulnar Nerve 444
- HILL, The Surgical Treatment of Sciatica 443

Sympathetic Nerves

- MILLER, G. P. Surgical Relations of the Sympathetic Nervous System 443

SURGERY OF THE CHEST

Chest Wall and Breast

- KENTON, G. Chronic Mastitis 447
- FRANKLIN, G. E. Deep Roentgenotherapy in Carcinoma of the Breast 447
- GANN, F. The Results of Postoperative Irradiation of Carcinoma of the Breast 448

Trachea, Lungs, and Pleura

- OWEN, H. R., and GONZALEZ, A. Pleural Empyema 448
- MCGUIRE, F. W. Lung Compression by Heavy Lipoid Pus in the Treatment of Lung Tuberculosis, Bronchiectasis and Lung Abscess 448
- JACOBZEL, H. C. The Cauterization of Adhesions in Artificial Pneumothorax Treatment of Pulmonary Tuberculosis under Thoracoscopy Control 448
- HENRIKSEN, P. The Frequency and Cause of Primary Carcinoma of the Lung 449

Heart and Pericardium

- BO, I. P. Cardiac Disorders Accompanying Esophageal Cancer 457
- IRVING, A. and COTTELL, J. C. Cardiotomy and Valvulotomy for Mitral Stenosis: Experimental (Aortic Regurgitation) (Mitral Stenosis) (Aortic Regurgitation) Operated Case with Recovery 459
- BEE, W. B. and WHITE, P. D. Heart Disease in Pregnancy 4
- HAMILTON, B. J. Notes on the Problem of Heart Disease in Pregnancy 47
- CAMPBELL, D. G. Pregnancy and Heart Disease 471
- Esophagus and Mediastinum
- GLADSTON, O. Two Cases of Unresectable Retro Esophageal Abscess with Phlegmon of the Neck and Thoracic Mediastinum: External Operation Through the Axillary Route: Prophylactic Colic Mediastinotomy: Recovery 457

Miscellaneous

- PINNEY, A. J. S. Primary Intrathoracic Neoplasms 45

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- GALLIE, W. I. and LEVINE, W. A. B. Iliac Surgery in the Treatment of Hernia 457
- JACK, C. A. Tuberculous Peritonitis 45

Gastro-Intestinal Tract

- MACLEOD, C. B. The Nervous Mechanism of Functional Disorders of Digestion, with Special Reference to Hypertension and Hypotension Dyspepsia and Nerve Cold 457
- CHAY, L. G. Duodenal Ulcers 453
- FRANKLIN, H. Reversion of the Stomach for Ulcer: Immediate Feeding in the Duodenal Tube 454
- VANNUCCI, C. Lipomas of the Intestine 454
- HARRY, R. J. and CHAY, T. G. Upper Intestinal Tract Obstruction 453
- FRANKLIN, H. and MACLEOD, C. B. Intestinal Intussusception: Thirteen Cases of Acute Intestinal Intussusception in Infants 455
- MILLER, G. I. Unilateral Intestinal Extirpation 458
- FRANKLIN, H. and WHITE, P. F. Some Observations on Duodenal Intussusception 456
- WHEATON, H. Duodenal Motility 457
- BRANTHAITE, L. R. The Flow of Lymph from the Mesenteric Angle and Its Possible Bearing on the Cause of Duodenal and Gastric Ulcer 458
- GONOR, and DUFFY. Eight Cases of Perforated Duodenal and Gastric Ulcers 458
- WATSON, J. J. Caustic Treatment in Duodenal Peptic Ulcer 458
- FRANKLIN, H. Primary Ulcer of the Jejunum 458
- FRANKLIN, H. F. Infectious Colitis 459
- JONES, D. F. The Surgical Treatment of Ulcerative Colitis 459
- GOTTSMITH, A. Colon Anastomosis in Necrotic Intussusception 459

- CAIRO, W. M., and MACCARTY, W. C. Involvement of the Lymph Glands in Cancer of the Cecum 459
- ASCHNER, P. W. Subhepatic Abscess Secondary to Appendicitis 460
- LOCKHART-MUNRO, J. P. A New Method of Treating Ischoorectal and Other Abscesses 46
- TRILLO, R. G. Roentgen Gastro-Intestinal Studies of Patients with Chronic Deforming Arthritis 457
- Liver, Gall-Bladder, Pancreas, and Spleen
- WILCOX, F. The Collateral Circulation in the Portal System 46
- TURNER, G. G. A Case in Which an Adenoma Weighing 1 lb. 3 Oz. Was Successfully Removed from the Liver with Remarks on the Subject of Partial Hepatectomy 46
- WAGNER, G. Primary Carcinoma of the Liver Excised by Operation 46
- FRANKEL, C. A Case of Rejection of the Liver for Malignant Disease Spreading from the Gall Bladder 46
- TURNER, P. A Case of Eversion of an Adenoma of the Liver Which Had Ruptured Spontaneously Causing Internal Hemorrhage 46
- KROF, F. A Case of Primary Tumor of the Liver Removed by Operation 46
- FRANKEL, W. H. Biliary Lymphangitis 463
- ERDMAN, M. A Few Points Regarding the Diagnosis and Treatment of Gall Bladder Lesions 463
- LEONARD, R. D. Secondary Signs of Gall Bladder Pathology 463
- HORNBY, A. H. Failure of Ligation of the Cystic Duct 463
- OLIVER, B. F. Studies on the Bile and Biliary Diseases 464
- TAMMRO, S. The Determination of Bile Salts in the Blood 464
- CANNON, G. T. Pancreatic Functional Tests 464
- ZIMMER, H. Acute Oedema of the Pancreas, Probable Stage of Acute Pancreatic Necrosis 464
- VOLLMANN, J. The Surgical Anatomy of the Vascular System of the Spleen 464
- RODRIGUEZ, F. C. Traumatic Rupture of the Normal Spleen 465
- WARM, G. Chronic Septic Splenomegaly 465
- CRANEY, W. C. Splenic Anemia: A Clinical and Pathological Study of Sixty Nine Cases 465
- MATOLA, G. A Case of Permanent Polycythemia After Removal of the Spleen 465
- GYNECOLOGY**
- Uterus
- LOCKHART, C. D. An Endometrial Adenoma of the Abdominal Wall Following Ventraperitoneum of the Uterus 467
- LATHAM, F. S. Inguinal Hernia of the Uterus 467
- THEODORE, P. E. Uterine Fibrosarcoma 467
- COHEN, J. A. The Limitations of Radiotherapy in the Management of Fibrosarcoma of the Uterus 468
- MALLET, L. The Treatment of Cancer of the Cervix of the Uterus 468
- Adnexal and Para-Uterine Conditions
- VAUTHIN, Tuberculosis of the Ovary and Pregnancy 468
- DELAVAL, L. Embryomas and Mixed Tumors of the Fallopian Tubes 469
- GUTHRIE, A., and MILLER, R. A Primary Epithelioma of the Fallopian Tube 469
- JAFFE, H. L. and MARINE, D. The Influence of the Suprarenal Cortex on the Gonads of Rabbits I. The Effects of Suprarenal Injury (by Removal or Freezing) on the Interstitial Cells of the Ovary 476
- External Genitalia
- SMITH, W. F. Carcinoma of the Female Urethra, with Notes of Two Cases Treated with Radium 469
- DEGRANDI, F. An Anatomical and Clinical Contribution to the Study of Benign Tumors of the Female External Genitals 469
- Miscellaneous**
- CLOW, S. The Effects of Physical Exercise on Menstruation 470
- RODNEY, A. J. Primary Sterility 470
- OBSTETRICS**
- Pregnancy and Its Complications
- VAUTHIN, Tuberculosis of the Ovary and Pregnancy 468
- HARRIS, F. The Pathologic Anatomy of Antepartum Hemorrhages of Pregnancy and Childbirth 47
- BRENN, W. B. and WHITE, P. D. Heart Disease in Pregnancy 471
- HAMILTON, B. E. Notes on the Problem of Heart Diseases in Pregnancy 471
- CAMPBELL, D. G. Pregnancy and Heart Disease 47
- JONES, J. B. Abdominal Pregnancy 47
- LEONARD, C. and HARTMAN, K. Further Contribution to the Clinical Aspects and Treatment of the Complications of Tubal Pregnancy 47
- Labor and Its Complications
- LEVANTY and PORTER. Hemorrhage in Vena Cava in Eclampsia 473
- GROSS, A. Syncope and Shock in Labor 473
- Puerperium and Its Complications
- PHILLIPS, J. The Puerperium 473
- FRANKEL, E. Gas-Bacillus Infection of the Uterus 474
- ENO, C. A Study in Puerperal Morbidity 474
- Miscellaneous**
- FRANKEL, L. E. An Obstetrical Case Presenting an Unusual Group of Complications 475

SURGERY OF BLOOD AND LYMPH SYSTEMS

Blood Vessels

- WALSHAM, F. The Collateral Circulation in the Portal System 46
- VOLLMANN, J. The Surgical Anatomy of the Vascular System of the Spleen 464
- GALES, E. A True Spontaneous Aneurysm of the Left Common Carotid Artery the Size of Goose Egg, Which Was Cured by Total Extirpation, Rapid Disappearance of Severe Brain Disturbances Following the Operation 496
- RIMMEL, J. and BERNHARDER, E. J. Calcareous Degeneration of the Dorsal and Lumbar Aorta as Cause of Backache 496
- DETOLAS, J. Ligation of the Common Iliac Artery as a Stump for Aneurysm 496
- HANCOCKSON, P. Three Cases of Embolotomy 497
- DISPINDER, P. Kinesotherapy in the Treatment of Phlebites of the Lower Limbs 497
- BROOKS, B. and MARTIN, K. A Simultaneous Ligation of Vein and Artery An Experimental Study 497

Blood and Transfusions

- MATOLEY, G. A Case of Permanent Polycythemia After the Removal of the Spleen 498
- DREHER, T. Further Results of Attempts to Influence the Hemagglutination Groups 498
- FINK, T. L. A Gravity Method of Blood Transfusion 498
- NYDENBERGER, L. Clinical and Experimental Research in Blood Transfusion 498
- BURCK, L. E. Autotransfusion 499
- KAYLER, K. Experimental Research in Hastening Blood Coagulation 499

SURGICAL TECHNIQUE

Operative Surgery and Technique Postoperative Treatment

- WOODMAN, E. M. Malignant Disease of the Upper Jaw With Special Reference to Operative Technique 438
- HEINZELER, Z. The Rebuilding of the Alveolar Processes by Bone Transplantation 439
- VAIL, D. T. Concerning the Surgical Treatment of Glaucoma, with Special Reference to Modified Elliot's Technique 43
- LEWIS, J. D. Depressed Nasal Deformities A Comparison of the Prosthetic Values of Paraffin, Bone, Cartilage, and Celluloid with Report of Cases Corrected with Celluloid Implants by the Author's Method 433
- HOWARTH, W. G. A Radical Frontal Sinus Operation 434
- LARRY, F. H. A Technique of Thyroidectomy 437
- RASTIANELLI, P. The Frontal Method of Schloffer Duret without Excision of the Orbit A Contribution to the Possibility of Relative Exploration of the Base of the Brain 44
- GALLIE, W. E. and LAMBERSCHNEIDER, A. B. Living Barriers in the Treatment of Hemorrhoids 45

- LOCKHART-MUNRO, J. P. A New Method of Treating Ischioanal and Other Abscesses 46
- MERCKE, W. The Treatment of the Flail Elbow Joint with New Operation of Arthrodesis 490
- MARTIN, E. D. and KROGH, A. C. A Preliminary Report of a New Method of Treating Fractures of the Neck of the Femur 494
- BLAIR, V. P. Restoration of the Burnt Child 500
- PRIOR, G. W. The Surgical Treatment of Burn Scars 50
- Antiseptic Surgery Treatment of Wounds and Infections
- SPRENGEL, N. Tetanus 5
- BURKELLO, A. Combined Treatment of Tetanus 50
- Anesthesia
- HEWITT, C. L. The Effects of Vagal Trauma in the Anesthetized Patient 503
- ROSE, S. F. Ethyl Chloride as an Anesthetic for Minor Operations on Children 50
- KUTNER, LEONARD, E. Experiences with Splenic Anesthesia 503

PHYSICO-CHEMICAL METHODS IN SURGERY

Roentgenology

- FRANKLIN, G. E. Deep Roentgenotherapy in Carcinoma of the Breast 447
- GRANT, E. The Results of Postoperative Irradiation of Carcinoma of the Breast 448
- MALLET, L. The Treatment of Cancer of the Cervix of the Uterus 468
- HUTCHINSON, R. W. The Roentgenological Diagnosis of Bone Tumors 487
- TAYLOR, R. G. Roentgen Gastrointestinal Studies of Patients with Chronic Deforming Arthritis 487
- STAURO, K. Practical Roentgen-Spectrometry and Its Physical Basis 503
- SNOWES, A. An Experimental Contribution to the Problem of the Growth Stimulating Effect of the Roentgen Ray on Normal Human Tissues 503
- JACKSON, E. L. The X-Ray Treatment of Tumors 503
- PICARD, H. Roentgen Absorption in the Blood and Extracorporeal Irradiation of the Circulation in the Treatment of Cancer 504
- FRANKLIN, G. E. Measurements on Two American Deep-Therapy Machines, with Special Reference to the Dose Method 504
- GOTTSMITH, P. P. The Roentgen Ray Ulcer and Its Treatment 505
- Radium
- COBURN, J. A. The Limitations of Radiotherapy in the Management of Fibromyoma of the Uterus 468
- MALLET, L. The Treatment of Cancer of the Cervix of the Uterus 468
- SNOW, W. F. Carcinoma of the Female Uterus, with Notes of Two Cases Treated with Radium 469

BIBLIOGRAPHY

Surgery of the Head and Neck

Head	509
Eye	509
Ear	5
Nose	5
Mouth	5
Throat	5
Neck	51

Surgery of the Nervous System

Brain and Its Coverings, Cranial Nerves	5
Spinal Cord and Its Coverings	51
Peripheral Nerves	5
Sympathetic Nerves	5

Surgery of the Chest

Chest Wall and Breast	5 3
Trachea, Lungs, and Pleura	5 3
Heart and Pericardium	5 3
Esophagus and Mediastinum	513
Miscellaneous	513

Surgery of the Abdomen

Abdominal Wall and Peritoneum	513
Gastrointestinal Tract	514
Liver, Gall Bladder, Pancreas, and Spleen	516
Miscellaneous	5 7

Gynecology

Uterus	517
Adrenal and Per Uterine Conditions	518
External Genitals	5 8
Miscellaneous	5 8

Obstetrics

Pregnancy and Its Complications	5 9
Labor and Its Complications	519
Puerperium and Its Complications	520
Newborn	520
Miscellaneous	520

Genito-Urinary Surgery

Adrenal, Kidney, and Ureter	520
Bladder, Urethra, and Penis	5
Genital Organs	5
Miscellaneous	5

Surgery of the Bones, Joints, Muscles, Tendons

Conditions of the Bones, Joints, Muscles, Tendons, Etc	5
Surgery of the Bones, Joints, Muscles, Tendons, Etc	523
Fractures and Dislocations	524
Orthopedics in General	524

Surgery of the Blood and Lymph Systems

Blood Vessels	5 4
Blood and Transfusion	5 5
Lymph Vessels and Glands	5 5

Surgical Technique

Operative Surgery and Technique Postoperative Treatment	5 5
Antiseptic Surgery Treatment of Wounds and Infections	525
Anesthesia	526
Surgical Instruments and Apparatus	526

Physico-Chemical Methods in Surgery

Röntgenology	5 6
Radium	527
Miscellaneous	5 7

Miscellaneous

Clinical Entities—General Physiological Conditions	527
General Bacterial, Mycotic, and Protozoan Infec- tions	527
Ductless Glands	528
Surgical Pathology and Diagnosis	528
Experimental Surgery	5 8

INTERNATIONAL ABSTRACT OF SURGERY

NOVEMBER, 1923

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Blair V. P., and Padgett E. C. Pyogenic Infection of the Parotid Glands and Ducts. *Arch Surg* 93: 14.

Acute suppurative parotitis is generally an infection ascending from the duct which is associated with decrease in the salivary flow, fever and deterioration of the general health. In all cases of severe septic parotitis associated with obstruction not due to stones, early drainage is beneficial.

The fifty cases reported by the authors are divided into two groups: (1) primary acute inflammation of the gland; (2) primarily recurrent symptoms of duct obstruction.

In Group 1 there were thirty-five cases of acute pyogenic parotitis characterized by sudden onset, severe local pain, marked swelling (first of the gland and later becoming rapidly extending cellulitis of the neck, head, and face), and the general symptoms of a severe infection with chills and fever. As the infection spread, oedema closed the eye (five cases), involved the neck down to the clavicle (two cases), extended to the breast (one case), extended backward over the mastoid process (four cases), or encroached on the pharynx and threatened the air passages (one case). During the stage of acute swelling one patient died from what appeared to be oedema of the glottis.

Less often the disease was associated with only slight local enlargement, mild rise in the temperature and moderate pain. Evidence of duct infection varied from minute red protrusion of the duct orifice at the papilla to the exudation from the duct of string of cloudy mucus or pus. Sometimes both were present. Six patients became delirious, four had convulsions, three uræmia, one involvement of the seventh nerve, and several, spasms of the muscles of mastication which prevented opening of the mouth. The disease was practically always secondary to, or appeared as a complication of an injury, postoperative state, some acute or chronic

illness or a terminal condition. When once relieved it showed little tendency to recur. It was more frequent in adults (twenty-six cases), especially after the third decade of life (seventeen cases), in females (twenty-four cases) than in males, and during the winter months when respiratory infections are more common than in the summer months. The organism responsible was usually the staphylococcus. In one case the pneumococcus was found. Streptococcus infection was extremely severe and in one instance caused death.

Mild cases were treated only with hot or cold applications. More severe cases in which the condition was not terminal were operated upon as soon as it became evident that the infection would not subside spontaneously. In doubtful cases the gland was opened not later than the second twenty-four hours. The authors consider it a more serious error to delay operation too long than to incise the gland unnecessarily. The purpose of operation is to prevent gangrene and suppuration.

The incision is begun 2 cm. anterior to the ear at the lower border of the zygoma and extended back to the ear downward to behind and below the angle of the jaw, and just through the capsule. A flap of skin and fascia is pulled forward with sharp retractor, the capsule is stripped from the entire gland, and the parenchyma is punctured and torn in many places. The facial nerve, which lies deep, is safeguarded by puncturing the gland with blunt forceps. The whole gland must be exposed and explored. The portions behind the lobe of the ear and along the origin of Stenson's duct are the ones which are often missed. The wound is packed wide open with gauze and bandaged with pressure. The wound closes spontaneously and noticeable scarring is prevented as most of the incision lies in the angle at the junction of the cheek and the ear. Repuncture may be necessary if the original exposure is incomplete.

After the operation the relief of symptoms is almost immediate.

In three cases a salivary fistula developed after incision. Of the thirty-five patients, fifteen (42.8 per cent) died. In eight cases the condition was mild and required no treatment. In eight others there were terminal complications and no treatment was given. In sixteen cases operated upon there were eleven recoveries and five deaths. The lives of three patients were saved by operation. Eight were benefited and their convalescence as shortened. Three were fatally ill when the parotitis developed.

In the cases of Group parotitis associated with obstruction, the obstruction was due to swelling and thickening of the mucosa, a plug of mucus lodged at the meatus, inflammatory contraction, or tone formed within the duct. The condition was hastened by exacerbations of moderate local pain and swelling, often more pronounced when food was taken or thought of and sometimes with general symptoms of a mild infection. The acute signs of the first group were rarely noted. Complete obstruction of the duct resulted in trophy of the entire gland.

Exacerbations were frequently related to acute infections in the mouth and nasopharynx. Usually there was some inflammatory disturbance of the duct. During the attack the saliva often contained thick mucus, and occasionally this was cloudy or semipurulent. As a rule changes in the saliva were associated with symptoms of mild infection. In one case a stone in the duct was felt with the probe and in another a felt under the skin with the finger. All large stones are shown by the X-ray. When the pain is due only to back pressure of the saliva there were no constitutional symptoms. In several cases chronic complete obstruction as followed by induration of the gland. Intraglandular abscess developed in a few cases in four it was single in one double in some multiple. In no case was there tenderness. Chronic obstructive parotitis occurs at any age and usually develops about preceding or accompanying severe or debilitating illness. In three cases however followed cold, in one the extraction of teeth, in one attack of tonsillitis, and in one tonsillectomy.

The treatment consisted in the control of the infection of the mouth and nasopharynx and the relief of the obstruction of the saliva. The removal of stones resulted in complete recovery. Obstruction due to acute swelling of the mucous lining of the duct or to mucus as often temporarily relieved by dilating with probe but occasionally severe reaction followed the use of the probe. In cases without stone and when probe dilatation fails to give permanent relief the authors favor slitting the meatus and suturing the epithelial lining to the mucous membrane of the mouth. A probe or probe scissors is passed into the duct and the duct is slit for 1/16 in. Three stitches of fine silk, one at the apex and one on each side are usually sufficient. In one case, in which Stenson's duct was situated close to the gingiva of the upper second molar recovery resulted after transplantation and splitting.

In addition to the two groups of cases described, the authors series included one case of questionable tuberculosis, two of abscess of both parotid papilla and syphilis, three of insufficient secretion, four of functional nervous derangement, and five of congenitally large parotid. Walter C. Street, M.D.

Woodman, F. M.: Malignant Diseases of the Upper Jaw with Special Reference to Operative Technique. *Bron J Surg* 9: 1, 2, 3, 5.

Woodman classifies malignant neoplasms of the upper jaw according to their site of origin as follows: (1) palat and alveolar, (2) air sinuses, (3) epipharynx, with invasion of the jaw and (4) cheek, with invasion of the maxilla.

With regard to the value of radium, the X-ray and diathermy in the treatment of such growths the author is not very enthusiastic. With regard to the surgical treatment he states that the operation must be modified according to the site and extent of the growth. There are certain classes of cases which are generally inoperable: (1) sarcoma arising from the base of the skull and secondarily involving the maxilla, (2) extensive involvement of the pterygoid alveolar fossa, (3) cases showing persistent meningitis infection, and (4) extension in invasion of the back of the eye suggesting involvement of the cavernous sinus.

In operable cases the operation is performed with the patient in the upright position, and intratracheal anesthesia is induced with ether. The incision is begun in the center of the eyebrow and carried down and made between the bridge of the nose and the inner canthus of the eye then along the line of Ferguson's incision down the groove at the side of the nose around the external nares to reach the philtrum, and then through the lip. On the buccal surface of the cheek the greatest care is taken to divide the mucosa low down, immediately above the neck of the teeth, and to elevate it throughout the entire length of the incision. In this manner it is possible to save considerable portions of buccal mucous membrane which can be sutured in position to the raw area on the inner side of the reflected cheek. The cheek flap is then drawn aside and care is taken to carry the knife down through the periosteum to the bone particularly on the inner side of the nose. If the growth has extended backward, and especially if its base is in the pterygoid fossa, it is necessary to make use of the horizontal incision beneath the orbit but this is only if possible. The cheek flap is protected from infection during the removal of the growth and the raw surface is sutured with tincture of benzoin and protected with small gauze pad soaked in the solution and sutured into position. The subsequent steps depend upon the nature, origin, and extent of the growth.

If the growth is confined to the lower half of the superior maxilla and does not involve the upper air sinuses, the lower part of the upper jaw is removed, the infra-orbital plate being left intact. To do this,

a horizontal incision is made following and parallel with the lower margin of the orbit at about the level of the infra-orbital foramen, carried through the ascending nasal process of the superior maxilla into the nose, and through the body of the malar bone to the pterygomaxillary fossa. The line of attachment of the cartilages of the nose to the bone is then divided, and if the nose is not involved the mucoperiosteum can be easily elevated and the soft parts of the nose turned inward without opening the cavity. The hard palate is then divided sagittally from the alveolar process backward. The separation is completed by detaching the soft palate by a horizontal incision and separating the back of the maxilla from the pterygoid process by driving a strong osteotome in between them. This partial incision, when it is adequate, gives very satisfactory anatomical results; the orbital cavity is not opened, and there is no drooping of the eye with consequent failure of alignment. The nasal cavity also is unopened and its important functions remain intact. The procedure is suitable for most growths arising from the palat and alveolus, even when they have perforated the antrum, provided their limitations can be accurately seen and delineated.

When the malignant changes have involved the upper air sinuses or the orbit, most extensive exposure is necessary to eliminate the disease. First of all the upper jaw and the entire side wall of the nose must be removed. Only too often this procedure is considered sufficient for the removal of the growth, but it cannot be too strongly emphasized that it is only one stage in the exposure of the deeper and more delicate parts around the skull base.

It is impossible to remove such growth in one piece without breaking across various extensions. The entire ethmoid up to the cribiform plate should be systematically removed, the sphenoid then opened, the anterior and inferior walls of the sinus cleared away and the contents eviscerated. The frontal sinus must be dealt with in similar manner. The duct should be traced upward and all the fronto-ethmoidal cells and the floor of the frontal sinus removed. As it is never advisable or necessary to remove the anterior wall, considerable deformity is prevented and infection of the diploë is avoided. Several cases of osteomyelitis have been recorded as the result of Killian's method of exposing the sinus. If possible an endeavor should be made to leave the periosteum of the orbital cavity intact, but everything must be done to assure the complete eradication of the growth. Special attention must be paid to the fat and muscle of the pterygomaxillary fossa. A common extension of the growth is backward through the internal meatus into the pharynx, here it lies free in the cavity. Extension into the pterygoid fossa is regarded as the most difficult to remove and one of the most frequent causes of recurrence. After perforating the thin posterior wall of the antrum, the growth extends highly vascular region and spreads rapidly between the fasciculi and planes of the pterygoid

muscle into a region which is difficult to approach by operation. After healing takes place, there is often a residual fibrosis in these muscles which leads to considerable difficulty in opening the mouth.

At the conclusion of the complete operation, the frontal sinuses, the sphenoid, and the cribiform plate lie freely exposed and form one large cavity leading to the mouth below and limited internally by the septum of the nose and externally by the replaced cheek flap.

OTTO M. ROHR, M.D.

Hegadone, Z. The Rebuilding of the Alveolar Process by Bone Transplantation. *Dental Cosmos* 93, liv 796

A piece of bone transplanted with its periosteum into the alveolar processes will grow very readily. It will grow even in bone long infected with pyorrhea. The tendency toward healing is better in the mouth than anywhere else in the body. In the majority of the author's cases primary healing occurred.

In the first attempts the transplant was taken from the maxilla or the mandible. Later it was obtained from the tibia.

Before operation the degree of pyorrhea and the number of teeth over which it extends must be determined. The teeth must be temporarily fixed with a wire ligature figure of eight or Schroeder's splint and arch. The occlusion should be taken care of by closing the teeth together to avoid a change in their position. The technique of the operation is as follows.

Under anesthesia a transplant is obtained from the crest of the tibia of the desired shape and size, 1 cm wide and not thicker than 2 mm. Care is taken to prevent injury to the periosteum. A bed is made in the jaw after Neumann's unfolding operation. A flap is folded back and the preparation carried past the transition fold. If this is done well, the gum can be raised and sewed back to the original height. The roots are cleaned, the softened bone is removed down to sound bone, and the sound bone is freshened with fine strokes of the chisel. The transplant is fixed with one or two stitches of catgut and the lateral incisions in the inter-dental papillae are joined together.

Strict sterilization is necessary to prevent infection, the mouth must be kept clean after the operation, and a liquid diet must be given for two days.

In one case the gum broke down because of overstretching. Six cases with good results are reported.

MARCUS H. HOBAR, M.D.

KYE

Weber F. P. A Case of Exophthalmos Probably Caused by Non-Suppurative Cavernous Sinus Thrombosis. *Proc Roy Soc Med Lond* 93, xvi Cha Sect 4.

The case reported was that of a woman 38 years of age who when first seen five months after an

The article is concluded with a discussion of the differentiation between retino cerebral degeneration, retinitis pigmentosa, and central choroiditis.

THOMAS D. ALLEN, M.D.

Appleman, L. F. Papillitis with Focal Infection. *Am J Ophth* 9 3 35 1, 563

Appleman reports a case of gradual failure of vision over a period of six years with narrowing of the field of vision and enlargement of the blind spot. The optic disks of both eyes were swollen. After the removal of twelve teeth and the treatment of others the vision again became normal.

VIRGIN WASCOTT, M.D.

Cutler, C. W. Disease of the Optic Nerve and Its Relations to the Posterior Nasal Sinuses. A Report of Four Cases Showing the Uncertainty of the Diagnosis. *Arch Ophth* 9 3 34, 33

In acute sinus disease with involvement of the optic nerve the outcome is usually good but there are many cases simulating retrobulbar neuritis with and without nasal sinus involvement which do not conform to the accepted views. Cutler reports four cases, one of aneurysm of the circle of Willis, one of encephalitis lethargica, one of diffuse perineuritis and thyrotoxicosis, and one of sinusitis with toxemia. In all of these there was evidence of optic neuritis, enlarged blind spot, peripheral contractions, and reduced vision.

VIRGIN WASCOTT, M.D.

Thomson, St. C. Optic Neuritis of Sphenoidal Sinus Origin; Operation. *Cure Brd M J* 9 3 975

The case reported was that of a patient who had postnasal discharge for several years. The eye symptoms began suddenly with a decrease in vision in the left eye followed a few days later by pain and tenderness to pressure above it. Vision was 6/9 in the right eye and 6/60 in the left. The left disk showed 6 diopters of swelling and the field of vision in the left eye was somewhat contracted. Pus was found in each choana and on the floor of the nose. The X-ray showed involvement of the frontal and sphenoidal sinuses.

An improvement in the ocular condition was noted after three days of treatment with radiant heat and steam inhalations. Operation was therefore indicated.

Under general anesthesia supplemented by the application of 5 per cent cocaine and adrenalin pack under the middle turbinate the middle turbinates were fractured with long-handled forceps the sphenoidal sinuses were entered and the ostium as enlarged with a punch. For the next four days no treatment was given. An improvement in the eye symptoms was noted. The sinuses were then washed out and almost immediate improvement in the eye symptoms followed. After repeated lavage of the sphenoidal sinuses at increasing intervals the eye symptoms and the postnasal discharge entirely disappeared.

Commenting on his experience with these cases the author draws certain conclusions. Septic of the accessory sinuses rarely causes retinitis, papillitis, or optic atrophy though frequently it may be the source of orbital affections. A suppurating sphenoid complicated by optic atrophy should be opened and drained. In retrobulbar neuritis even in the presence of negative findings as to sphenoidal infection opening of these sinuses seems to be warranted.

MANFORD R. WALTZ, M.D.

Vall, D. T. Concerning the Surgical Treatment of Glaucoma with Special Reference to Modified Elliot La Grange Technique. *Arch Ophth* 9 3 34, 346

Vall believes that the best results are obtained in acute glaucoma by von Graef iridectomy in sub-cut glaucoma by Smith iridectomy and in secondary glaucoma by removal of the cause supplemented by paracentesis or iridectomy.

Glaucoma simplex he attributes to arteriosclerosis. With regard to the treatment he makes the following statement: When cases fail to control the tension, retain the vision and field of vision in *stasis quo* operate before it is too late. He failed to gain good results by his operation of connecting the vitreous chamber with the lymph space of Tenon but his modification of the Elliot and La Grange operation has proved successful. He trephines the sclerocornea, performs the iridectomy in the usual way and makes a 3-mm incision to the left and right of the trephine opening parallel with the periphery of the cornea. The trephine hole does not close before the lateral incisions. This operation gave good results in nineteen cases in which it was used the last two years and failed only twice.

VIRGIN WASCOTT, M.D.

Lodge, S. and Lodge, W. O. Herpes Zoster Ophthalmicus. *Brd M J* 9 3 4, 404

The incidence of herpes zoster ophthalmicus in clinic cases ranges from 1 in 1,000 to 1 in 5,000. Most of the subjects are about 55 years of age. In children the symptoms are usually negligible. The condition occurs with equal frequency in males and females and on both sides of the body. It is usually sporadic, supervening during temporary fatigue in persons otherwise healthy and active. According to the position of the causative lesion Poulard distinguishes three types of the condition: the neuritic or peripheral form, the hemicerc or ganglionic form, and the metameric form in which the lesion is in the postmedullary nucleus of the fifth nerve.

Herpetiform eruptions are found in 1 per cent of cases of lethargic encephalitis, and Head and Campbell state that anatomically and pathologically herpes zoster may be described as acute posterior polyomyelitis. The authors raise the question as to whether the virus of shingles is attenuated form is not liable to an increase of virulence.

In mild cases the early neuralgic pain is unilateral but in severe cases there is intense headache with

vomiting. Meningitis may be suggested by involvement of a meningeal branch from the ophthalmic division of the fifth nerve. According to Chaurand, extension of the disease to the meninges in spinal matter would account for the pain down the spine, girdle sensations, etc. Formication is a typical symptom. Canalization is dependent upon the age of the patient and the extent of the scarring. *Anaesthesia dolorosa* may persist for as long as two years.

Cutaneous manifestations make their appearance as follows: hyperaesthesia, erythema, vasculature, rupture of the vesicles, coagulation, and hypoaesthesia. According to Poulard, the eruption may be hemorrhagic.

The disease must run its course. Morphine, though indispensable at times, is dangerous because of the duration of the disease. For some cases Hochmanson recommends ipecac. The authors recommend the local use of dusting powders until the vesicles rupture and then the application of cocaine or orthoform ointment. In the later stages, painting with ichthyol in glycerine or massage with any simple ointment is effective. Paroline instilled into the conjunctival sac may be beneficial. The intra-ocular tension should be determined at regular intervals. In severe cases medial tarsorrhaphy is indicated; this provides natural dressing with adequate drainage. The central united portion is not divided until corneal sensibility returns.

MAURICE R. WALKER, M.D.

Franklin, W. S. and Cordes, F. C. Lapsus Lacrimae with Ocular Extension. *Am J Ophth* 93, 3, 4, 573.

Franklin and Cordes report a case of lachrymiferous fistula first seen when the patient was 3 years of age and then not seen again for nine years, during which time the condition extended and involved the face. At the second examination the upper and lower lids of the right eye were found contracted and the exposed cornea was opaque. The removed eye showed epidermoid epithelium and round cell infiltration of the cornea and vascularity. The episcleral tissue and the sclera showed well-defined giant cell.

Vernon Wescott, M.D.

EAR

Odeness, T. H. Otitis Media, Mastoiditis, and Disease of the Nasal Accessory Sinuses as Causative Factors in Malnutrition in Children. *Ann Otol Rhinol & Laryngol* 93, 2008, 50.

In approximately 75 per cent of the cases of malnutrition admitted to the Ancon Hospital, Canal Zone, ear disease had been present at some time in the development of the condition. A few patients had the characteristic symptoms of otitis media and the fever was relieved by paracentesis. In the majority of the cases, however, the ear findings were negative except for lack of reflex of the drum and slight thickening which did not prevent the light reflex. Following paracentesis of the apparently

normal drum, slight improvement was noted, notwithstanding the fact that the ears did not discharge for two or three days after the puncture. The delay in the discharge was attributed to slow drainage from the mastoid cavity. The infected ears which were not punctured drained through the eustachian tubes.

In the author's opinion, malnutrition is sometimes due also to mastoid infection.

JAMES C. EMMETT, M.D.

Layton, T. B. The Treatment of Acute Otitis Media in Children. *Brit J Child Dis* 9, 1, 12, 65.

Layton discusses the changes in the appearance of the drumhead in otitis media, from the earliest evidence of inflammation to bulging, and advises frequent inspection in order that, if bulging occurs, an incision may be made before the occurrence of spontaneous rupture.

As local treatment the application of dry heat and the instillation of warm carbolic glycerine drops are recommended. The use of moist heat in the form of warm irrigations of water is condemned as it causes maceration of the epithelial lining of the canal and prevents proper inspection of the drum.

After an incision has been made or rupture has occurred, the canal must be kept clean and the opening patent.

OTTO M. ROTT, M.D.

Alden, A. M. Myringotomy from the Standpoint of the Pathology of Early Otitis Media. *J Missouri State M Ass* 9, 3, 12, 69.

The author states that when myringotomy is done by a skilled otologist on the proper indications it is without danger and practically always successful. The routine of opening every red ear drum is once in a while wrong. Alden discusses the mechanics of the middle ear and the pathologic changes that take place during an early otitis media which show the dangers of myringotomy at the wrong time.

When the inflammatory process begins in the pharyngeal end of the eustachian tube the resulting congestion and swelling cause a negative pressure in the middle ear cavity because swallowing or mastication does not open the tube. This allows the drum to be forced inward by the outside air pressure. The negative pressure causes the blood vessels to become engorged and swollen and the external surface of the drum becomes red. A continuation of the process causes transudate to collect in the middle ear cavity. This fluid, as well as the cavity, mastication, and opening invites infection. Alden treats this stage by applying adrenalin to the pharyngeal end of the tube, as a suture bag to the external ear and proper medication to the pharyngeal unit.

The change to the second stage of the condition is gradual; the negative pressure changes to positive; the tympanic membrane is gradually forced outward, and the drum bulges into the external auditory canal. At the same time the transudate becomes infected, the pain changes from a stopped up feeling to a

lancinating pain, and leucocytosis appears. The drum should then be opened. For this operation an anæsthetic should be given, preferably nitrous oxide, except in the cases of very young children. A drum properly incised rarely needs re-incision. The author's conclusions are:

Neither the color of the drum nor the configuration of its external surface should be regarded alone as an index of the stage of the ear disease. The decision for or against incision should be based upon all of the signs and symptoms considered together.

Perfect control of the patient is obtainable only by some form of general narcosis.

Paracentesis should be done only in acute interstitial myringitis; all other openings should be incisions rather than stabs.

If the drum membrane is properly opened, re-incision is rarely necessary. If the fever and other symptoms persist after an adequate primary opening, a careful examination should be made for possible mastoiditis or intracranial complications.

GUY L. BORMER, M.D.

NOSE

Lewis, J. D. Depressed Nasal Deformities. A Comparison of the Prosthetic Value of Paraffin, Bone, Cartilage, and Celluloid; with a Report of Cases Corrected with Celluloid Implants by the Author's Method. *Ann Otol Rhinol & Laryngol* 913, xxiii, 3.

The author classifies the common types of depressed nasal deformities as retrograde nose, saddle nose, and depressions of the nasal tip. Other varieties, which usually result from injuries, are combinations of these types.

For the correction of external nasal depressions by buried prosthesis, one of the following methods is suggested: (1) subcutaneous injections of paraffin, (2) autogenous transplants of bone cartilage (3) celluloid implants.

Each of these methods is discussed in detail and the discussion is supplemented by comments based on the author's experience. Lewis describes also the technique used to avoid more or less conspicuous scar following the incision made for the introduction of the nasal prosthesis.

By the oldest method of forming subcutaneous tunnel a transverse incision is made at the root of the nose corresponding to the point where the bridge of spectacles rests. This method has fallen into disrepute for many reasons. In modification of it recently suggested by Frank and Straus the initial incision is made on one eyebrow or both eyebrows and from this point the tissues over the infraglabellar notch and dorsum of the nose are elevated with specially designed angular elevators and cutting instruments. The sole advantage of this method is that the scar is concealed by the eyebrows.

Other methods suggested are those of Monks and Gilhes. The technique of these procedures is described and their disadvantages are discussed.

The author's technique is described briefly as follows:

A vertical incision is made in the lower half of the columella nasi, and its lips are undermined laterally toward the nasal vestibules. Then by upward cuts with a pair of small, curved blunt scissors, the nasal tip is undermined and converted into a hood. With the same scissors, introduced on the flat, the hood is elevated and the tunnel dissection continued as far as desired toward the infraglabellar notch.

By first packing the anterior nares with gauze cotton, the field is rendered amenable to sterilization. Local anesthesia is wholly adequate. By working through the soft tissues at the base of the nose the parts are easily manipulated. Therefore it is not difficult to follow the contour of the nasal dorsum and, with a little care, to carry the tunnel dissection toward the nasal bones without departing from the midline; hence, lateral displacement of the prosthesis is prevented. The support furnished by the tip hood prevents extrusion. The two or three sutures required to close the initial incision are well removed from the tunnel containing the prosthesis. The soft tissues of the columella promptly heal without scar formation.

A series of cases are reported. The article is supplemented by many photographs illustrating the steps in the author's technique and showing a number of his results. A. R. HOLLANDER, M.D.

Aligier, E. D. Headache of Sinus Origin. *Obstetrical & Gynecological* 913, xix, 503.

In cases of headache, sinus involvement should be suspected when the patient has a cold which does not clear up in from four to ten days and when he has frequent colds. Recurrent infection of the mucous membrane of the nose, throat and larynx by the bacteria in an infected sinus is a common cause of both recurrent colds and headache.

OTTO M. ROTTE, M.D.

Thomson, B. C., and McIlraith, C. H. Mucocoele of the Frontal Sinus. *J. Laryngol & Otol* 913, xxviii, 365.

Fewer than 100 cases of mucocoele of the frontal sinus have been reported in the literature. The authors report the case of a woman 6 years old who suddenly while in apparently good health, became dizzy and fell forward and to the left. This attack was followed by frequent attacks of dizziness in which she saw flashes of light. Three months later she complained of double vision, insomnia, and severe left frontal and temporal pain which was aggravated by stooping. The left eye became displaced downward and outward.

At examination the movement of the left eyelid and eyeball was found to be good and the fundus normal. Above the inner canthus of the left eye extending outward to the supra-orbital notch, was a well-marked, rounded, firm, and semi-fluctuant swelling. The anterior wall of the left frontal sinus was slightly prominent but not tender. On trans-

Illumination the frontal sinuses were clear. The roentgenogram showed a large left frontal sinus with indistinct shadows extending into the orbit. The anterior end of the left middle turbinate was enlarged and there was bulging of the bulla ethmoidalis. No pus was found.

Operation disclosed a large mucocoele extending behind the eyeball up into the frontal sinus. Complete recovery resulted. WILLIAM B. STARK, M.D.

Howarth, W. G. A Radical Frontal Sinus Operation. *J. Laryngol. & Otol.* 93, xxxix, 34.

In the author's opinion chronic suppuration in the frontal sinus is associated with suppuration in the ethmoid, and a frontal sinus operation should allow the complete removal of the ethmoid cells if this is necessary.

The operation described has been used in over 200 cases. A curved incision is made under the supra-orbital margin and brought down in front of the inner canthus on the side of the nose.

The periosteum is incised in the same line as the skin incision, and the periosteum covering the roof and inner wall of the orbit is raised. The pulley of the superior oblique is then detached from its notch and all of the orbital contents are displaced outward with the lacrimal sac.

The sinus is next opened just above the lacrimal groove and the entire floor of the sinus is removed up to the supra-orbital margin. The lining mucosa is disturbed as little as possible.

With copper bougie passed through the frontal duct and through the nose, the bone in front of the frontonasal duct is removed and the operator may see whether any ethmoid cells are moulding up into the floor of the frontal sinus or overlying the frontonasal duct.

The ethmoid cells, and if necessary the sphenoid, are next attacked.

A new nasofrontal duct further forward than the old one is made. A rubber drainage tube is inserted through the nose and the wound closed.

WILLIAM B. STARK, M.D.

Mackenzie, A. R. and Wells, E. D. Sarcoma of the Ethmoid. *J. Am. Med. Ass.* 923, 1322.

The authors report a case of sarcoma of the ethmoid in which there was apparent recovery after roentgen ray treatment—one maximum dose, 84 per cent of the erythema dose, 200,000 peak kilovolts, 5 ma. with a 1 mm. copper and mm. aluminum filter. Improvement as noticed within twenty-four hours. Six weeks later the patient was practically cured, but prophylactic dose the same as the first dose was given.

The authors draw attention to

The comparative rarity of sarcoma of the ethmoid.

The rapid retrogression of the tumor in the case reported and the return of vision (from light perception to normal vision) after one maximum dose of the roentgen ray (short-wave length).

3. The rapid improvement in the patient's physical and mental condition.

4. The fact that the short wave-length roentgen ray did not damage the finer structures of the eye or the delicate diseased mucous membrane.

5. The fact that so far as was revealed by a careful search of the literature this is the first case of apparent recovery induced by the treatment described.

The physical, clinical, and laboratory examinations revealed no evidence of metastasis.

OTTO M. ROTT, M.D.

Dutrow, H. V. Some Further Observations on the Etiology and Treatment of Maxillary Sinusitis. *Ann. Otol. Rhinol. & Laryngol.* 9, 3, xxxix, 358.

In Dutrow's opinion most infections of the maxillary sinus are of the ascending type. This is contrary to the belief of many who in the past regarded the antrum as a reservoir into which pus drained from infected frontal and sphenoid sinuses and from the ethmoid cells. The author concludes as follows:

1. Destructive intranasal surgery should never be resorted to until after the diseased antrum has been treated and sufficient time has elapsed for the structures within the nose to return to normal.

2. As no re-infections have occurred following Caldwell-Luc operation in which the middle turbinate and ethmoid labyrinth are left intact, this fact disproves the theory of descending infections.

3. In chronic empyema with granulation, thorough removal of the disease within the sinus, adequate drainage and constant ventilation are essential for satisfactory results.

4. Absence of deformity, the preservation of physiological structures, and marked improvement in the general condition fully justify proper radical surgical intervention in this type of sinus infection.

A. R. HOLLANDER, M.D.

MOUTH

Quick, D. Carcinoma of the Floor of the Mouth. *Am. J. Roentgenol.* 923, 2, 46.

Carcinoma of the floor of the mouth presents a definite clinical picture and should be easily recognized. The lesion begins almost invariably in the mucosa of the anterior half of the floor of the mouth and usually just at the side of the frenum of the tongue. Its growth is rapid. Malignant growths of long duration such as are frequently seen on the tongue are practically never found in the floor of the mouth. In all of the cases seen by the author the carcinoma was of the squamous cell type. The disease establishes itself deep in the musculature of the floor of the mouth and as the anatomical arrangement facilitates extension the depth of infiltration is relatively greater than that of any other group of intra-oral carcinomas. In those cases of growth beginning at the side of the frenum of the tongue, extension to the opposite side is rapid. This creates

essentially a double lesion, necessitates a more complicated course of treatment and favors wider lymphatic dissemination.

A peculiar characteristic of the disease is the infiltration of the tongue from below upward. As this is not necessarily accompanied by extensive ulceration of the lingual mucosa until late in the course of the disease, only palpation may reveal it. The rich blood supply and the movement of the tongue may be contributory factors in its spread.

Carcinomata usually arise in the mucosa at the buccal or lingual side of the floor of the mouth, thus probably accounting for the fact that the early extension is medial rather than lateral. Extension to the lymph nodes occurs often and early. The submaxillary nodes on the side of the primary growth are most commonly affected. Next in frequency of involvement is the jugular node of the upper deep cervical chain arising from the carotid bulb.

Smoking should be considered a contributory cause of carcinoma of the floor of the mouth. Poor teeth and ill fitting lower plates are other sources of constant irritation.

Until recently the treatment of the disease has been largely surgical. Pastes are not well adapted for use on moist surfaces. The various heat methods are incorrect from the theoretical point of view.

The author is opposed to the surgical removal of the primary growth in this group of cases as only a small percentage of the subjects are physically able to stand it. The mutilation of the operation is usually extensive. The trauma may cause more trouble than the knife removes and the loss of blood favors rapid growth in the remaining focus.

The treatment of intra oral carcinomata should be considered, first with regard to the primary lesion, and, second, with regard to the cervical nodes.

In the treatment of the primary growth unfiltered tubes of radium emanation are buried uniformly throughout the involved area with care to place them well to the limits of the palpable infiltration. The tubes should be so inserted that there is approximately one tube per cubic centimeter of tumor tissue. The gamma ray effect alone from buried emanation is three to four times as great as the strongest cross fire of heavily filtered radium at a distance of only 5 cm or high dosage X-ray at a distance of 30 and 70 cm. The tubes have not been found to cause trouble as foreign bodies. The slough in the mouth may be more extensive than in other regions as infection is more common in the mouth.

In the treatment of the cervical lymphatics, conservative procedure is favored. The neck is treated with the X-ray and the lymph nodes in the destruction of the tumor cells and to stimulate the protective defenses of the body cells. In this manner secondary extension of the disease is combated and partial destruction of the lymph channels is effected. If at this time the neck is free from palpable involvement radiation with the X-ray or heavily filtered radium is given and the case is kept under observation. If an involved node is found or

appears, a unilateral block dissection under local anesthesia is done and radium emanation is buried at all suspicious points in the wound. If the disease has already perforated the capsule of a node or group of nodes, radium emanation is buried in these nodes before the wound is closed.

In all cases an estimate of the result to be reasonably hoped for should be made before treatment is begun. If complete regression of the disease is possible it is justifiable to use doses to the limit of tissue tolerance, even at the risk of considerable reaction. If only palliative relief can be expected the patient's comfort should be given first consideration and the dosage modified accordingly.

During a five year period 13 cases of carcinoma of the floor of the mouth were treated. Twenty three patients have been clinically free from the disease for periods ranging from eight to fifty to months. The average length of time for the group was twenty five and half months. Of forty three patients given palliative relief eighteen are still living. Fourteen patients have been treated too recently to warrant judgment as to the outcome.

The author reaches the following conclusions:

Carcinoma of the floor of the mouth is a distinct clinical entity with peculiar therapeutic problems which render it unlike any of the other intra oral groups.

We believe on experience to date warrants us in using interstitial radiation by means of unfiltered radium emanation tubes as the agent of choice in the treatment of the primary lesion.

We believe that the problem of dealing with the metastatic extension of the disease to cervical nodes is best handled conservatively, with the use of combination of surgery, radium, and the X-ray.

These conclusions are made with full recognition of the limitations of the observation period and of the number and type of cases treated.

JAMES C. BRANFILL, M.D.

Patterson, N. Diathermy for Malignant Disease of the Mouth, Pharynx, and Nose; with Notes on Seventeen Successful Cases. *Brit. M. J.* 9 3 11, 56.

In reporting seventeen cases of malignant disease of the mouth, pharynx, and nose which were successfully treated by diathermy, Patterson states that the chance of obtaining complete and lasting cure is excellent when the growth is small, superficial, and some distance from important structures, and when the glands are free from involvement or only slightly involved.

OTTO M. ROHR, M.D.

THROAT

Howarth, W. G. and Gloyne, S. R. Unhealthy Tonsils Associated with Cervical Adenitis. *Lancet* 9 3, col. 20.

The authors studied a series of thirty four enlarged tonsils from cases with marked cervical adenitis. They summarize their findings as follows:

1. In enlarged and unhealthy tonsils associated with cervical adenitis in children the chief histological changes noted were (1) a marked increase in the lymphoid tissue and (2) lesions in the crypts—desquamation of the epithelial lining, plugging of the orifices, dilatation of the lumen into cyst-like spaces, and occasionally the formation of mucus masses.

2. Every tonsil examined showed evidence of bacterial infection. Many different species of organisms were found. The maximum number of species discovered in one tonsil was seven and the average number three. The most common was the streptococcus.

3. In series of tonsils examined for the presence of pathogenic organisms it was found that 50 per cent contained bacteria which were virulent for the mouse. These organisms were hemolytic and non-hemolytic streptococci and pneumococci of Types I and IV. This pathogenic group of cases showed greater liability to the development of large masses of cervical glands (five of eighteen) than did those of the non-pathogenic group (none in fourteen).

4. The hemolytic streptococci varied as to their virulence in the mouse.

5. Bacteria demonstrated in sections (chiefly cocci) showed that the infection tended to follow a definite path, *is* through the stratified epithelium (generally in the crypts where it is thinner than on the surface) into the diffuse lymphoid tissue thence along the minute lymphatics of the connective tissue trabeculae to the capsule and thence to the lymph trunks of the pharyngeal wall.

6. In a separate series examined for tuberculous it was found that the giant cells were generally in the lymphoid tissue and rarely elsewhere.

7. In two cases, actinomycetes like organisms were obtained, but there is reason to believe that they were not true ray fungi.

From this study it seems probable that tuberculous is only a late infection, and that in the majority of cases the cervical adenitis is due to septic absorption from tonsils containing pyogenic organisms such as the streptococcus. This view is borne out by the fact that when the infected tonsils are removed by operation the affected glands frequently subside.

OTTO M. ROTT, M.D.

NECK

Benedict, C. G., and Benedict, F. G. A Permissible Breakfast Prior to Basal Metabolism Measurements. *Boston M & S J* 9, 1, December, 1949.

The rapid advance in the use of basal metabolism measurements as an index of the plane of vital activity has resulted in the study throughout the United States of probably not less than 200 or 300 persons each day.

One discomfort experienced by the subject of these tests is the necessity of abstaining from food completely for twelve hours. Often he has sensation of hunger and frequently experiences faintness.

The psychological attitude toward the test would therefore be greatly bettered, if it were possible to give an amount of food which would temporarily satisfy the appetite and yet would not stimulate the metabolism to such a degree as to vitiate the basal metabolism determinations.

In a study of the influence of light meal upon the metabolism Du Bois and his associates found that the metabolism was essentially the basal level two hours after the ingestion of a meal consisting of a small quantity of protein and saccharose. The meal should be non-stimulating and should produce a sense of satiety. The food elements that stimulate metabolism are protein and the ketone sugars such as levulose and sucrose. Fats are the least stimulating and fortunately are the class of nutrients that most freely produce a sense of satiety. The meal decided upon consisted of

- 1 cup (200 c.c.) of caffeine-free coffee
- 16 mgm. of saccharin
- 30 gm. of medium cream
- 5 gm. of potato chips

In this meal there is very little protein, no ketone sugar, an appreciable proportion of fat, and a total caloric value of about 50 calories, depending upon the percentage of fat in the cream.

The authors report the details of the study of the effect of this diet on 12 normal subjects. It is concluded that in normal persons a meal of this type is without any measurable influence provided the food is eaten at least one hour before the tests are made. However, as it has not been demonstrated that even this small amount of food does not further stimulate the abnormally high metabolism obtaining in certain disturbances of the endocrine glands, tests should be made along this line before the light breakfast is given in cases of pathology.

In the authors' opinion the euphoria resulting from the light warm breakfast will lessen the subject discomfort and irritability and thereby lead to more accurate basal metabolism measurements.

A. W. BRYAN, M.D.

Brown, L. E. The Relation Between Thyrotoxicosis and Tonsillar Infection. *A. Otol Rhinol & Laryngol* 923 XXXI, 367.

From questioning practitioners whom he believed to be in a position to give information, the author concludes that comparatively little attention had been given to the possibility of relation between goiter and tonsil infection and that it is generally believed that goiter is largely of toxic origin and that the tonsils are no more likely to be the focus of infection than any other part of the body such as the sinuses, teeth, and gall bladder.

A survey of the recent literature relating to the subject seems to indicate that those who have investigated the coincidence of goiter and infection of the tonsils incline to the belief that in many cases diseased tonsils may be directly responsible for goiter either simple or exophthalmic. Brown urges that throat specialists give particular attention

to the state of the thyroid gland in all cases. I infected tonsils and that practitioners treating thyroid disorders bear in mind the possibility of an exciting factor in diseased tonsils.

ARTHUR L. SHERRELL, M.D.

Frank, L. W. Surgery of the Toxic Thyroid
Kentucky M J 923, xxi, 306

In the author's opinion, the basal metabolism is a most valuable aid in the diagnosis of toxic goiter but not an index of operability or the postoperative reaction. X-ray treatment is not without danger as death may result from the reaction to it just as after operation. The best treatment is a graded operation performed with the patient in a state of analgesia induced with nitrous oxide oxygen and the local use of novocaine.

ARTHUR L. SHERRELL, M.D.

Boss, E. P. Cardiac Disorders Accompanying Exophthalmic Goiter
J Am M Ass 923, lxxx, 583

In exophthalmic goiter the tremendous dilatation of the arteries and veins of the thyroid short circuits the blood flowing to the neck and increases the load on the heart in the same manner as arteriovenous aneurysms, while the heightened oxygen consumption causes an increased minute volume flow of the blood which may be from 5 to 60 per cent greater than normal. The increased work thus thrown on the heart is the chief cause of cardiac dilatation, hypertrophy and insufficiency in exophthalmic goiter.

ARTHUR L. SHERRELL, M.D.

Labey F. H. A Technique of Thyroidectomy
Surg Gynec & Obst 93, xxvii, 85

The author describes a technique he has used in several hundred goiter operations which gives better exposure of the field and greater safety than the usual technique. An incision is made just through the skin, except in the middle where it is carried deeper going down to the sternothyroid and sternohyoid muscles. A pair of blunt scissors is inserted at this point and the platysma raised out to the end of the incision without damage to the large veins on

the anterior muscles of the neck. The prethyroid muscles are then cut between clamps and reflected upward and downward. The sternomastoid is dissected free from the prethyroid muscles and retracted outward, together with the internal jugular vein and the carotid artery. In this manner the upper pole is well exposed so that it may be ligated in full view. After division the thyroid is turned downward for clear posterior exposure to prevent injury of the recurrent laryngeal nerve and the parathyroids.

ARTHUR L. SHERRELL, M.D.

Hubbard, R. S. and Webb, G. W. Acetonuria Following Thyroid Operations.
Clifton Med Bull Clifton Springs, N. Y. 923 ix, 85

The authors give the results of studies of the acetone in the urine in a few cases operated upon for goiter and compare them with the findings in cases of abdominal operation.

They found that the use of nitrous oxide oxygen for the induction of anesthesia had no effect on acetonuria, but that the ingestion of carbohydrates tended to reduce it. Glucose given by rectum reduced it but did not prevent it. They believe that thyroidectomy has a specific effect in the causation of acetonuria as the latter did not always follow other operations. They accept the view that acetonuria may be the result of increased secretion due to handling of the parts during the operation as this may increase the metabolic rate which in turn exhausts the sugar reserve and produces an acidosis akin to that found in carbohydrate starvation.

In the few cases studied the acetonuria approximately paralleled the metabolic rate. Persons with goiter frequently have a low carbohydrate reserve, and thus starvation increases acetonuria. The degree of acetonuria varied directly with the metabolic rate and roughly with the activity of the glands as shown by section.

The conclusion is drawn that the two factors influencing acetonuria after goiter operations are an immediate increase of thyroid secretion due to the operation and a lowered carbohydrate reserve.

E. A. BAUMANN, M.D.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS; CRANIAL NERVES

Rosenow E. C.: Specific Serum Treatment of Epidemic (Lethargic) Encephalitis. Further Results. *J Am M Ass* 9:3 1932, 583

A somewhat peculiar streptococcus has been isolated from the infected tonsils, teeth, and nasopharynx of patients suffering from various forms of encephalitis. With this streptococcus, typical symptoms and lesions of encephalitis have been reproduced in animals, the type of disease induced experimentally often resembling that present in the patient from whom the strain was isolated. In series of immunological and other experiments it has been found that while the various strains are of low virulence they have decided antigenic power. With the dead bacteria, rabbits have been successfully immunized against encephalitis. Agglutination and agglutinin absorption tests, the convalescent human and hyperimmune horse serum show that most of the strains isolated are immunologically identical. The serum from rabbits and horses immunized by repeated injections of increasing doses of this streptococcus has been found to protect rabbits and mice against properly gauged doses of homologous and immunologically similar heterologous strains.

The serum used in the cases reported was a mixture of the serum from the horses injected with four strains, one strain from the throat of a patient with lethargic encephalitis, one from the spinal fluid of a patient with encephalitis and marked involvement of the meninges, one from the throat of a patient having encephalitis with hiccup, and one from the medulla of a rapidly fatal case of encephalitis.

After desensitizing dose, the serum was given intramuscularly intravenously or intracranially. Beneficial results were manifested in various ways, depending on the type of the disease. The effect in 150 cases are studied. Eighty-five patients improved and forty-three showed no appreciable change. In two acute cases it is the opinion of the attending physicians that the symptoms were aggravated following the injection of the serum. Of the group of patients who showed improvement three died after temporary benefit. The duration of the disease at the time of serum treatment, determined in seventy-one cases in the group of patients who derived apparent benefit, ranged from two days to three years. Of the group of forty-five patients in whom no beneficial effects were noted, nineteen died. Most of the fatal cases were acute and very severe forms of the disease and, in many, inadequate amounts of serum were given.

The time when improvement began varied considerably. As a rule it occurred within twenty-four hours after each injection, but in some instances, especially in chronic forms of the disease, it did not occur until after recovery from delayed serum reaction. In most cases in which improvement was apparently initiated by the serum treatment, it continued thereafter in some, the gain was temporary. In subminating bulbar types of the disease the serum did not stay the process. In cases of long duration, anatomical changes may have taken place which precluded the possibility of benefit. In acute fulminating cases the reasons for lack of improvement are obvious, but in milder forms of the disease are not so apparent. Sepsis of teeth and tonsils may have been responsible or the explanation may be found in the fact that not all of the strains are immunologically identical. The authors' experimental studies indicate that the progressive and hanging character of the disease, the exanthema, and the so-called sequelae are due to an active infection by a streptococcus which has peculiar neurotropic and other properties, and that uraemia may be favored by the presence of primary foci of infection.

The results obtained thus far are encouraging and about what could be expected in view of the results of protective and other experiments on animals, but less much to be accomplished.

Jacobi, H. G.: A Case of Cerebral Cyst in an Infant. *Am J Dis Child* 9:3, 435

The author reports the case of an infant a year old who was taken suddenly ill with spells of vomiting and restlessness and awakened from sleep with sudden outcries of pain. When examined by Jacobi it was comatose and occasionally exhibited convulsive movements. The pupils were dilated and did not respond to light. There was bilateral ptosis. The eye grounds were negative. The knee jerks were exaggerated and the Babinski reflex was present. The urine contained 0.8 per cent sugar. Edema of the lungs developed and the child died the following day.

Autopsy revealed an excessive amount of cerebrospinal fluid and marked flattening of the convolutions, especially over the right hemisphere. Beneath the posterior horn of the lateral ventricle on the right side there was a thin-walled cyst containing 50 cc of creamy yellowish fluid as found. This was non-adherent and easily shelled out. The contents of the cyst proved to be chiefly pseudomucin. The hyperglycemia may have been a part of the terminal condition or the result of pressure on the fourth ventricle stimulating the punctate diabetes of Bernard.

Bruns classified brain cysts as: (1) congenital (2) traumatic (3) parasitic, (4) those resulting from brain softening and (5) those of unknown origin. The author believes that his case belonged to the group of congenital cysts. The contents of the cyst proved to be of the proliferative type.

WILLIAM J. PROBERT, M.D.

Parkinson, J. P. and Broster, L. R. A Case of Cerebral Abscess in Child. *Lancet* 93 Oct 1907

The case reported was unusual because the patient was only 4 years old and because the abscess was secondary to lung pathology and eroded through the skull, forming tumor beneath the scalp. At first there were packsonian convulsions beginning in the left arm, but months elapsed before headaches, vomiting, choked discs, and reflex changes appeared. The postmortem examination revealed an abscess of the right pre- and post-rolandic areas, $\frac{3}{4}$ in. below the cortex, smaller abscess on the medial aspect of the brain, and slight internal hydrocephalus. The lungs were emphysematous, and pus was present in the smaller and lower bronchioles. Staphylococcus aureus was found in the pus from the brain and the bronchioles.

P. R. BILLYMORLEY, M.D.

Dandy, W. E. A Method for the Localization of Brain Tumors in Comatose Patients: the Determination of Communication Between the Cerebral Ventricles and the Estimation of Their Position and Size Without the Injection of Air (Ventricular Estimation). *Surg. Gynec. & Obst.* 93 XXXVI 64

A method of localization offered only as an emergency procedure for use in the cases of patients in the last stages of intracranial pressure, coma or impending coma, consists in estimating the size, position, and intercommunication of the ventricles by aspiration of the fluid in the lateral ventricles and occasionally from the caudate magna. At all other times, if there is doubt as to the location of the tumor, the precise method of cerebral pneumography should be used if the patient's condition is favorable.

The position of the lateral ventricles can be determined by ventricular puncture: their size, by measuring the fluid in the ventricles; and their communication with each other by injecting fluid into one ventricle and testing for the color elsewhere in the ventricular system. Puncture of both ventricles is always necessary. This information, while it still leaves much to be desired, is usually sufficient to indicate whether either cerebral hemisphere or the cerebellum is the probable seat of the tumor.

The author approaches the ventricles posteriorly through a small perforator opening in the occipital region of each side of the skull, as for cerebral pneumography. The occipital region is chosen because the largest part of the lateral ventricle, the vestibule, is most accessible from this point. The vestibule on the whole, is less easily collapsed and

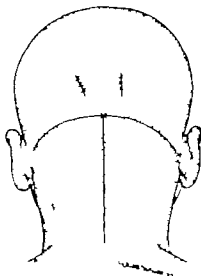


Fig. 1. T shows the position of bilateral ventricular punctures. A cerebellar incision is outlined for orientation. F shows the position, either slightly oblique or vertical incision can be made.

dislocated than other parts of the ventricle, and the vestibules and posterior horns are farther apart and less equally occluded by the same pressure. B. Lateral puncture of the anterior ventricular horns has been done, but the anterior horns are smaller and more difficult to enter. Dislocation and collapse of both is more likely because they are closer together and more equally affected by pressure directed from the side. The site of puncture is nearer the midline and in more vascular areas. Lateral puncture into the descending horn has been done very rarely and never bilaterally. Lateral puncture of the left ventricle is hardly to be considered because of the important speech areas which the needle must traverse.

Normally the needle enters the ventricle in a proper direction at given depth. Definite lateral displacement of the vestibules indicates the location of the growth and is presumptive evidence of a tumor in the posterior half of the cerebral hemisphere. Tumors in the anterior hemispheres are of pituitary cause such pronounced displacement of the vestibules. A ventricle which is hydrocephalic will be more easily reached than a normal ventricle.

The lateral ventricles, which vary in different persons, are apparently of equal size in the same person unless there is some lesion to cause inequality. The lateral ventricle is smaller on the side of the cerebral tumor (excluding resultant localized hydrocephalus). As a rule it is impossible to reach the ventricle with the needle, and if it is reached, only a few drops of fluid will escape. Occasionally both ventricles may be small and one must rely for information solely upon ventricular puncture. For practical purposes, 5 cm. is a

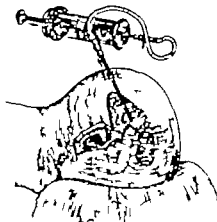


Fig Diagram with lateral ventricles outlined indicating the approximate course of the ventricular needle

standard quantity of aspirated fluid from which to draw conclusions. Aspiration of more fluid would usually require the injection of air to prevent too great negative pressure. A small ventricle on one side will eliminate a tumor in the posterior fossa but of unilateral or focal hydrocephalus on the other side. A unilateral hydrocephalus does not prove a tumor to be located in the posterior fossa. Unless the ventricle is very small, the quantity of fluid that spurts from the needle indicates the degree of intracranial pressure only roughly. From a normal or small sized ventricle there will be considerable spurt of fluid. Hydrocephalic ventricle may not give more. After the relief of pressure, the important factor is the residual quantity that can be aspirated.

Free communication of the two lateral ventricles is indicated by the injection of 1 or 2 ccm of indigocarmine into one lateral ventricle and its aspiration from the other. If none of the dye passes into the contralateral ventricle (obstruction present anterior to the aqueduct of Sylvius) there must be tumor in the anterior or middle rather than the posterior cranial fossa. If both ventricles are dilated and the dye passes freely to the opposite side, the tumor will be in the posterior fossa, except in cases of pineal gland tumors and long standing cases of hydrocephalus in which an artificial communication between the lateral ventricles has resulted from pressure atrophy of the septum pellucidum.

Indigocarmine is not irritating, but phenolphthalein may cause very decided irritation. An obstruction (usually tumor) at or posterior to the aqueduct of Sylvius will prevent the dye in the lateral ventricles from appearing in the cisterna magna or the lumbar subarachnoid space. If the hydrocephalus is due to the increased production of fluid rather than to obstruction, the dye will pass freely. Thus communication or obstruction can be

determined by aspiration through lumbar puncture, cisternal puncture (Ayer's puncture), or operative exposure of the cisterna magna. Because of the danger of medullary injury the latter is strongly opposed to lumbar puncture in cases in which intracranial tumor is suspected. It should never be done unless pressure has been relieved by craniotomic puncture, and even then Dandy would hesitate to do it when the patient is in coma. Ayer's puncture would be equally dangerous. In a doubtful case of tumor of the posterior fossa it is very much safer to expose the cisterna magna. If tumor is present, an operative procedure is necessary.

The author reports the cases of four patients with brain tumor who were comatose on admission to the hospital. No information leading to localization of the tumor could be obtained by examination or from the history given by friends and relatives. In three of these cases the estimation of the ventricular capacity alone made the localization possible. In the fourth case both lateral ventricles were so reduced that only drops of fluid could be obtained from either side, but the ventricles are so definitely dilated toward the right that the tumor was localized to the left cerebral hemisphere.

The method is dependent upon a knowledge of the ventricular topography and ability precisely to reach the normal ventricle and to interpret the results of punctures in terms of intracranial pathology. Causes of error are:

1. The great variation in size of the normal lateral ventricles. In one case they were four or five times the size of those in another. Fluid quantities may vary from 3 to 4 ccm.

2. The position of the tip of the posterior horn near the surface of the brain. This may suggest that the ventricle is dilated.

3. Bilateral hydrocephalus may develop from obstruction at any point between the foramina of Monro and Magendie, conditions in both the middle and the posterior fossa. A high percentage of tumors are in the middle fossa. The error results from a small group of tumors of the pineal and contiguous brain that occlude the aqueduct of Sylvius but do not close the foramina of Monro. Tumors of the pituitary and third ventricle and certain tumors of the pineal body can be eliminated by the indigocarmine test.

In the presence of bilateral hydrocephalus, free communication of the lateral ventricles, cerebellar exploration is justified. With the dye test, practically all tumors of the posterior fossa can be found at operation.

In the cases of comatose patients, ventricular estimation may be used to exclude tumors from other intracranial lesions simulating tumor. The author reports a case of coma with chronic meningitis and acute hydrocephalus.

Ventricular estimation requires little time, is relatively simple, easily performed, and relatively harmless. The principal danger to life is in puncturing

an intra-ventricular tumor and thereby causing intra-ventricular hemorrhage. Its most important defect is the possibility of incorrect localization. Hence the method should be used only in emergencies in which the more precise methods (such as cerebral pneumography) may aggravate the pressure symptoms when the intracranial tension is high and valuable time could be lost in making them.

WALTER C. BURKE, M.D.

Hashimoto, T. The Absorptive Power of the Subarachnoid Space (Ueber die Resorptionsleistung des Subarachnoidalraumes). *J. ges. Ztschr. f. Dermatol. Urol.* 9, 1934, 63.

Numerous investigations have been made with regard to the passage of substances absorbed in the blood into the cerebrospinal fluid, but the absorptive power of the subarachnoid space has been studied by only a few workers.

The author attempted to demonstrate the passage of alkaline 0.6 per cent phenolsulphonaphthalein and 5 per cent indigo-carmin solution from the blood to the cerebrospinal fluid in animals (guinea pigs, rabbits, and puppies) and in man, but obtained only negative results.

In other animal experiments he injected the same dye stuffs into the subarachnoid space and endeavored to follow the process of absorption by determining the time when the dye appeared in the urine. He found that this occurred somewhat later than after intravenous injection.

In investigations on human beings, he injected from 10 to 45 cm of phthalein in alkaline 0.6 per cent solution. About one-half hour after the injection all of the subjects complained of transitory paralysis of the lower extremities and phenomena of irritation such as vomiting and headache. The dye did not appear in the urine until after from nine to forty minutes.

HASHIMOTO (2)

Lesser, H. and Nixon, G. E. Dyspituitarism and Epilepsy. *Med. Clin. N. Am.* 9, 3, 4, 471.

The authors report six cases of epilepsy associated with marked evidence of disturbance of the endocrine glands, primarily the pituitary. Organotherapy was administered to all of them. In four it was given for a period of from one to one and one-half years, with strikingly beneficial results on the menstrual disturbances, obesity and mental and emotional states. In five cases treated for long time the epileptic seizures either ceased entirely or became far less frequent and much milder. Two of these patients received neither hormonal or bromides.

The authors consider it important for the future of these patients that existing endocrine abnormalities be recognized and that determined effort be made to correct them. They do not intend to suggest that all cases of epilepsy not due to brain tumor or syphilis are due to, or associated with, endocrine pathosis.

An essential in all gland therapy is patience. The treatment must be continued for months sometimes

even for years; no results can be expected from haphazard treatment for a period of a few weeks.

WALTER H. NIXON, M.D.

Bastianelli, P. The Frontal Method of Schloffer Duret Without Exenteration of the Orbit. A Contribution to the Possibility of Relative Exploration of the Base of the Brain (Il metodo frontale di Schloffer Duret senza exenterazione dell'orbita: contributo alla possibilità dell'esplorazione relativa della base del cranio). *Arch. ital. di chir.* 9, 3, 11, 40.

The author reports the case of a boy of 15 years whose condition was diagnosed as due to a left retro-orbital endocranial tumor of probably osseous origin. From the symptoms it was believed that the tumor was parasclerotic, near the apex of the orbit, and that it compressed the optic nerve.

The Schloffer Duret frontal method of approach was chosen not only on account of the situation of the tumor but also because this method exposes the apex of the orbit. In 1931 Frazer performed hypophysectomy successfully by the fronto-orbital route; the frontal strip in this case was somewhat smaller than that of Schloffer Duret and had a lateral pedicle. No exenteration was done.

After incising the dura Bastianelli was able to explore the optic nerve, the chiasma and the anterior sella turcica in full view. Exploration of the left lateral part of the sella with the finger caused a spurt of serous fluid. This contained particles resembling the remnants of the walls of a cyst. A deep hemorrhage then appeared, and as the patient became cyanotic, the operation was concluded.

On the eighth day after the operation the temperature began to rise. The bone flap was therefore opened up and the region lavaged with physiological salt solution. On the fourteenth day signs of meningitis appeared and on the eighteenth day the patient died. A autopsy was not permitted.

Bastianelli considers the case very interesting not only because of the survival of the patient for eighteen days, but also because the operation described permitted exploration of the base of the brain from the anterior surface of the sella turcica forward.

W. A. BURNETT

Patonson, D. Tuberculous Meningitis. *Practitioner* 9, 3, 43.

The author describes tuberculous meningitis as a military tuberculous infection of the meninges having its origin at some focus within the body. The bronchial glands were responsible in 87 per cent of the cases studied, and the mesenteric glands in 1 per cent. In 90 per cent the lungs were also involved, and in 75 per cent the spleen and other abdominal organs.

The bronchial glands of children are infected by the inhalation of human bacilli, while the mesenteric glands are involved through the wallowing of contaminated food. In the author's opinion the bacillus of human tuberculosis is responsible rather than the bacillus causing the bovine type. The

general military infection may follow an infectious disease or be brought about through confinement in poor surroundings and by improper or a nutritious food.

The diagnosis must be made from the history of an insidious onset, drowsiness, and constipation with occasional emesis. At times there may be a sharp cry and as a rule general hyperaesthesia is present. The condition may be differentiated from ocephalitis and polyomyelitis by its onset and general picture. Repeated spinal puncture may be necessary and in doubtful cases of mastoid infection an exploratory incision should be considered.

WILLIAM J. FICKETT, M.D.

Jenkins, G. J. Otitic Meningitis. *J. Laryngol. & Otol.* 9, 1, XXXIII, 201.

By the term "meningitis" is to be understood an inflammation of the meninges of the brain and the spinal cord produced by a micro-organism. If inflammation of the meninges arises secondarily to and due to septic disease of the ear it must be regarded as a septic meningitis, either or not an organism is found in the cerebrospinal fluid.

It remains for otologists to recognize and determine (1) the septic affections of the ear that are prone to cause meningitis, in order that this intra-cranial complication may be more often diagnosed at an early stage; (2) the symptoms and signs associated with the early as well as the late stages of meningitis; (3) the symptoms and signs that will indicate the region of greatest intensity of the inflammation and the probable limits, if any, of the affected area.

The causative factor is a colony of micro-organisms situated either in the ear or some closely related structure infected from the ear or the meningeal system itself, but the pathological and clinical progress of the condition depends chiefly on the resistance of the subject to the organism and its toxins. There does not seem to be any definite relation between the nature of the organism and the clinical progress.

Up to certain point, meningitis of viral origin may be compared with abscess formation. In this phase the infection is extending toward the meninges from the ear or a part infected from the ear.

The most simple form of meningitis is an extradural because in this condition only the outer surface of the dura may be affected. Obvious meningitis of the subarachnoid region may occur secondarily to ear disease in the absence of microscopic evidence of disease of the dura mater.

The study of the changes in the cerebrospinal fluid in meningitis is of the utmost importance. However, while these changes have been regarded as affording the most reliable information as to the nature and stage of the condition, there is reason to believe that they are reliable only when considered with the clinical features.

The character of the changes in the lumbar puncture fluid is due to three chief factors, viz. the site

of maximum infection, and the stage reached by the inflammatory process. Jenkins' experience has led him to believe that differences in the character of the lumbar puncture fluid depend far more upon these factors than upon the effect of any particular bacterial toxin.

In all the cases of infection of the meninges of the middle fossa that have come under the author's observation the path of infection was through the roof of the middle ear.

Infection of the meninges of the posterior fossa may occur by way of the labyrinth and through the posterior wall of the antrum or may be secondary to septic thrombosis of the lateral sinus. In the cases studied microscopically by the author the infection passed from the labyrinth to the meninges, along the elements of the auditory nerve and to the internal auditory meatus.

The character of the early symptoms and signs depends first upon whether the primary infection occurred in the external or in the intracranial subarachnoid space, and second, upon whether the invasion is in the posterior or middle fossa. Primary infection of the external points can occur only through the labyrinth.

In the cases of acute labyrinthitis which have been under Jenkins' care in recent years, the lumbar puncture fluid has always been examined and has usually been found normal. The path of infection is probably by way of the internal auditory meatus.

In the invasion of the external one of the most obvious signs of the change is slight torpidity without irritability, a feature recognized by the patient friends if not by the surgeon.

Inflammation in the intracranial part of the subarachnoid space usually spreads comparatively slowly, and the early symptoms are therefore more those of local than a spreading inflammation.

It is the early stage of the subarachnoid type of leptomeningitis that most often passes unrecognized, probably because otologists pay too little attention to the patient's complaints and rely too much on the physical signs. Headache, especially when localized in the affected side, should be considered of great significance even when it is unsupported by other symptoms or signs and further the ear condition is acute or chronic.

In the author's experience affections of the subarachnoid space in the posterior fossa have always been secondary to lateral sinus thrombosis or to abscess (subarachnoid or intracerebellar). In these conditions also the symptoms of meningitis are observed until the disease has reached the external points.

The statement so commonly made that septic meningitis should not be diagnosed unless the organism can be demonstrated in the cerebrospinal fluid is both erroneous and dangerous.

Jenkins gives the symptoms of infection in various locations of the skull.

In the operative treatment of leptomeningitis whatever the stage it may be regarded as (continued)

tal that the causative ear disease should be eradicated as completely as possible whatever other additional procedure is adopted. Such treatment should be sufficient to bring about a satisfactory result in all the milder affections of the meninges (*meningeal drainage*) when the organisms have not invaded the subarachnoid region. No doubt many cases of this condition are unrecognized, particularly because all symptoms are often entirely cleared up after the radical operative measures usually employed in the treatment of ear disease.

When it is clearly evident that the infection has invaded the subarachnoid region, drainage must be established speedily at the point of maximum infection.

In a primary infection of the external pons, the course of the operative procedure should be along the track of the infection, i.e. through the labyrinth to the internal auditory meatus. It is important that all bleeding be stopped before the internal auditory meatus is opened.

The author describes in detail the technique of operation for infections in the external region, the trabeculated subarachnoid region, and the later stages of leptomeningitis.

The conclusions arrived at from the study of this aspect of otitic meningitis are as follows:

We must endeavor to recognize leptomeningitis at the early stage, when the infection is local and there is evidence of region of maximum intensity of inflammation. Treatment at this stage has fair chance of success.

There is an intermediate stage of the disease the treatment of which is still matter of investigation and experiment.

There is a stage in which surgical aid is impossible.

A detailed report of five cases of leptomeningitis successfully treated, as made in the *Journal of Laryngology and Otology* in 1910. Three additional cases are recorded here. *CARR R. STERN, M.D.*

SPINAL CORD AND ITS COVERINGS

Kerppe, W. I. The Retention of Sensation Over the Sacral Segments of Value in the Differential Diagnosis Between Extra- and Intra-Medullary Spinal Cord Lesions? (Ist die erhalten gebliebene Sensibilität der letzten Sakralsegmente ein differenzialdiagnostisches Unterscheidungskriterium zwischen extra- und intramedullären Rückenmarksläsionen?) *Acta med. Scand.* 93 1911, 557.

A study of a large series of cases of spinal cord disease will reveal the occasional retention of sensation over the sacral areas when there is complete loss of sensibility in the rest of the trunk. In other words the impulses from the caudal end of the body have escaped the interruption which has involved all other sensory impulses. This phenomenon sometimes appears in cases of Brown-Sequard paralysis. It is probable that in the cervical region impulses from the sacral segments, after crossing within the cord pass up in paths separate from those from the lum-

bar and thoracic segments. The arrangement of these paths must be lamellar.

The author cites several cases of extramedullary lesions which exhibited this phenomenon and concludes that such retention of sensibility is an important differential sign between extra- and intra-medullary lesions. *LOYAL E. DAVIS, M.D.*

PERIPHERAL NERVES

Lewis, D. Some Peripheral Nerve Problems. *Berlin M. & S. J.* 923 clxxxviii 975.

The problems of peripheral nerve regeneration should be approached only by regarding the nerve as conducting link in the neuromuscular system, the other links being the nerve cell, the motor end plate, the peritendinous network, the muscle fiber and the sensory disturbances following nerve section. The chief problem is to find which of these elements most often fails in the attempt at nerve repair.

Most striking in the distal nerve segment is the absence of gross evidence of trophic. Myelin cylinder changes seem to be secondary to neurofibrillar changes, the myelin becoming irregular in outline and broken up into fragments with round ends. The neurofibrillae become thickened, irregular in outline, and granular and break up into masses and granules. These changes are degenerative.

At the same time regenerative change begins in the neurilemmal sheath. The neurilemmal nuclei show mitotic figures and the protoplasm increases in amount and is displaced into the lumen of Schwann's tubule to be between the masses of myelin. In this manner the so-called protoplasmic bands are formed. Similar bands develop in the proximal segment. The protoplasmic bands from the two segments unite.

Without these bands nerve regeneration cannot take place, for it is by this mechanism that the developing neurofibrillae of the proximal segment are enabled to reach the distal segment. There is controversy however as to whether such fibrillae be within the bands or merely beside them.

From the foregoing facts it is seen that a *sine qua non* of successful peripheral nerve surgery is the accurate apposition of the ends of the severed nerve.

The motor end plate of the higher vertebrates is a flattened, branched termination of the neurofibrillar substance of the nerve fiber of which it is the end organ, and may be attached by collateral branches or represent terminal branch of long nerve fiber. It is beneath the sarcolemma, at which point of entrance the nerve fiber seems to lose its neurilemmal and myelin sheaths. The end plate overlies the banded sarcolemma of the sole plate, and between them is the fine meshed, peritendinous network which connects the end plate and the sarcolemma. This network disappears after degeneration and is probably regenerated by the neurofibrillae.

The fibrillae of the end plate degenerate in much the same way as the neurofibrillae proper, and when

the resulting granular fragments has disappeared the work of the sole plate becomes relatively more distinct and undergoes an atrophic change.

In nerve repair it is noted that the neurofibrils of the terminal portion of the nerve are regenerated in excess of the number needed. There is no evidence that the fibrils of the peripheral portion are drawn into the terminal portion by a hemostatic substance but there is evidence that the protoplasmic mass is pulled into the sarcolemma, making the neuromuscular system involved. Developing fibrils have an enormous growth energy along the lines of least resistance as is seen in osteomata. Each scar tissue has blocked the growth. Some times (in experimental animals) they may bridge large gaps, following the line of a heterotransplantation.

All evidence indicates that if any access of the protoplasmic mass to the distal segment is secured the regenerative neurofibrils will pass fairly rapidly to the distal end organs and that the principal problem of nerve suture then will concern the removal of scar tissue and hematoma between the segment.

My findings have led down by the investigators in any part of the neuromuscular system, and it appears that complete nerve restoration.

The use of transplants in nerve suture has not been very successful probably because of scar tissue formation.

Muscle hangs following nerve section. It is largely stimulated to throw in the distal segment. Regeneration seems to begin before degeneration is complete. Loss of weight is constant in binding. Not all of the fibers become atrophied and some of them are enlarged by fatty change and fibrous changes. The number of fibers is reduced. The muscle hangs in most striking. The nuclei are arranged in columns and groups. Increase in number by mitosis just as in the sole plate. This is probably reparative measure.

The amount of muscular atrophy varies. This change has been ascribed to exhaustion following fibrillary contraction probably due to increased permeability to salt. The muscular atrophy varies in degree amount and location in the muscle. This has also been regarded as the use of trophic evidence of this being seen in the trophic in cases of carcinoma in which voluntary disease is accompanied by the pain. Again trophic has been ascribed to venous stasis (neuropathic hyperemia) as in noted in ischemic palsy. Striking of muscle does not cause trophic (in experimental animals) on the contrary hypertrophy results because of the loss of tone and is not affected by posterior root section. From these it is concluded that the use of rigid plant is a paralytic muscle is not the cause. Laugier believes that it is incorrect to say that paralyzed muscle is overstretched by its antagonists.

Contraction of nerve is not sufficient to cause scar tissue formation. It does not seem to interfere with the rapid return of function, even following months of muscular disease.

The author discusses the classification of cutaneous sensibility. Protopathic sensation (physiologically the older) includes the conduction of pain and the extremes of temperature. Epithetic sensation includes tactile localization and discrimination and the minima of temperature. Following nerve section the epithetic anesthetic area is always greater than the protopathic area (spatial dissociation) and with regeneration the protopathic sensation encroaches upon and obliterates the area of total anesthesia long before the return of epithetic sensation (temporal dissociation). Sedgwick has shown that the return of prick pain to the border of an anesthetic area is not of itself a indication of returning protopathic sensation unless it is accompanied by return of tactile sense. The anesthesia follows a nerve section never extends completely over the area of the applied by that nerve but is encroached upon by adjacent normal fibers which may account for the seeming return of prick pain. Epithetic sensation is much slower in returning and may never fully reappear.

Hypertrophy following nerve injury is not common, but may be extremely painful. It usually follows injuries to the median and ulnar popliteal nerves such as incomplete division or suture. The most common lesion in such cases is neuritis. The patient tends to be spontaneous but may be controlled by alcohol injections. Accompanying the pain is trophic changes in the skin of the area. It becomes red and having seemingly trophic, or a mottled bluish red.

Following nerve suture and after the return of sensibility, varying degrees of muscular power are noted. Frequently it is found that the response of the individual muscle is a deficient, but that co-ordination is poor. Such failures must be due to the loss of afferent stimuli from muscles, tendons, and joints.

The greatest success in nerve suture follows early primary suture with an attempt to restore as near as possible the pattern of the divided nerve.

F. R. BARNES, M.D.

Guthrie, P. Lat. Paralysis of the Ulnar Nerve (Paralysie latérale du nerf cubital). Arch. France. Med. 1917, 1, 1, 107.

Paralysis of the ulnar nerve may appear many years after a fracture of the terminal condyle of the humerus. In a case reported by the author that of a man of 48 years it did not develop until forty-four years after fracture of the elbow.

The paralysis is caused by the ulnar valves produced by the fracture, the nerve being stretched over the summit of the olecranon and irritated.

The aim of operative treatment should be to restore the carrying angle of the arm so that hooking of the nerve and its irritation by the olecranon will be prevented. Supracondylar curvilinear osteotomy is a simple method of obtaining this result. Recovery from the paralysis is more rapid the earlier the operation is performed.

W. A. BARNES.

Heile: The Surgical Treatment of Sciatica (Zur chirurgischen Behandlung der Ischias) *Deutsche Zeitschr. f. Chir.* 9. Jahr

While rheumatic sciatica and that caused by disturbances in the plexus are as a rule best treated by conservative measures sciatica caused by trauma and local pressure due to inflammation usually requires surgical treatment. In the author's opinion, such local disturbances are more common than is generally assumed and often are associated with local changes in the nerve due to chronic inflammation.

The inflammatory constricting processes consist in a thickening of the epineurium, the coating of inflammatory nodules, or extravasation of blood into the so-called intra spinal space and lead to pressure on all of the nerve trunks or only certain ones. They are found following indirect as well as direct trauma. They may follow pulling or sprain or furunculosis of the gluteal region or lower extremities. Pelvic tumors are frequent causes which are often overlooked.

In four cases dilation of the epineurium was found at the level of the sciatic foramen. When inflammatory adhesions between the individual nerve trunks are present the pressure such cases must be particularly high. In one case an anomalously inserted piriform muscle which divided the nerve was the cause of the pain. Open injuries of the sciatic nerve caused by bullets are not allowed by sciatica, probably because as the secretion has chance to escape there is no further disturbance of the nerve leading to ascending neuritis such as that following an entirely aseptic primary nerve suture.

The operation for the relief of sciatica should be performed at the site where the anatomical change is to be expected. Resection of the sensory terminal branches by Stoffel's method was successful in only one of four cases. As a rule it is not applicable.

In sciatica of the nerve trunk the changes are found chiefly along the femur. Therefore it is here that the nerve should be exposed. This is done by making an incision from the sacrum to the greater trochanter parallel with the gluteal fibers. It is necessary to have free accessibility to spare the muscles, and to obtain good hemostasis. The individual nerve trunks must be separated for a distance of 1 cm and freed from their adhesions to the epineurium. After this the nerve does not require special covering, as the musculature, which has been spared as far as possible lies smoothly around it.

If the sciatica is of the roots resection of the roots is necessary. Heile resected the fifth lumbar and the first, second, and third sacral roots, one after the other without harm. In the case of a patient whose leg had been amputated he resected the second, third, fourth, and fifth lumbar and the first and second sacral roots. Exact neurological findings are necessary before root resection is done.

Lange's injections may precede the operation. If they are to help, they must be massive, consisting

at first of the injection of from 30 to 50 c cm of a 5 per cent novocaine solution into the nerve trunk. In cases of severe pain small amounts of 1 per cent solution are indicated. Later from 100 to 200 c cm of physiological salt solution may be used. These injections may break up the adhesions between the individual trunks. A good result indicates the presence of such adhesions and that neurolysis may be beneficial.

HANSMANN (2)

SYMPATHETIC NERVES

Muller G. P. Surgical Relations of the Sympathetic Nervous System. *Ann. Surg.* 9:5, LXVII, 64.

Abdominal pain and discomfort are the symptoms characteristic of surgical abdominal disease. Internal surfaces do not respond to previously unexperienced stimuli. The most important physiological phenomenon resulting from intra-abdominal irritation is spasm. Surgical treatment aims to remove the irritation causing the spasm. Kappas produces local abdominal anesthesia by injecting the semilunar ganglia to block the splanchnics.

Jonnesco's resection of the cervicothoracic nerve for the treatment of epilepsy has proved unsuccessful. Cervical sympathectomy has been applied also to exophthalmic goiter in gravis, trifacial neuralgia, and angina pectoris. In cases of epilepsy and goiter the operation has sometimes been followed by death. In glaucoma only the superior ganglion is resected; this is rarely done today and de Schweinitz does not recommend it. In case of restriction of the visual field Abadie found that the resection of one of the carotid sheaths was followed by transient improvement. Ligation of the carotid had similar effect.

The sympathetic nerve supply to the thyroid gland follows the superior thyroid artery. The inferior thyroid artery is probably accompanied by branches from the second cervical ganglion. Ligation of the superior thyroid is beneficial because of the resulting anemia and the section of the nerve supply. Lenche noted remarkable regression in the size of goiter after unilateral sympathectomy of the superior thyroid artery. Lenche suggests that in toxic cases with tachycardia this operation might be supplemented by resection of the superior cardiac nerves and control of the exophthalmos by paracervical sympathectomy. Odernatt reports that ligation is painless if the thyroid artery is dissected bare.

Lenche proposes resection of the auriculotemporal nerve to suppress parotid secretion in cases of parotid fistula.

In angina pectoris Jonnesco relieved the pain by removing the middle cervical ganglion, the sympathetic trunk, the plexuses about the inferior thyroid and vertebral arteries, and the inferior and first thoracic ganglia on the left side. Tuffier relieved pain in case of discrete and fusiform aneurism of the thoracic aorta by freeing the aneurism and wrapping it with a strip of fascia lata. The freeing

of the aneurism probably removed the sympathetic plexuses.

Leriche, who was the first to describe peri-arterial sympathectomy has reported about sixty-four operations. From 8 to 1 cm of the adventitia are removed. A primary marked constriction of the artery is followed by dilatation which becomes attenuated in five or six days and disappears after three or four weeks. Leriche's opinion the vasodilation and hyperemia are the important factors. The author has done peri-arterial sympathectomy thirteen times on eleven patients. Instead of performing a sympathectomy, Handley injects into the adventitia 4 minims of alcohol at four equidistant points in the circumference of the artery. Primary vasoconstriction does not occur.

Along the course of the peripheral nerves, twigs are given off with increasing frequency toward the periphery and connect with or form the network on the blood vessels. Todd and Kramer state that the distal arteries are supplied by sympathetic fibers which have traveled to their destination along special nerve trunks instead of main vessels. Distribution, the nerves to the vessels correspond closely to the nerves to the skin and muscles of the same area. In case in which Regard entered the ulnar nerve there was almost immediate restoration of sensation, the disappearance of vasomotor disturbances, but motion did not return until after six months.

Leriche classifies phenomena arising from injury to the peri-arterial sympathetic plexuses as follows: (1) physiological reaction characterized by painful ischemia and consequent vasodilation and (2) a disturbance of the physiological reaction from constriction of too long duration or an abnormally persisting dilation. Group 1 includes *si peur arterielle*, Raynaud disease and possibly acrocyanosis. Sudden arterial spasm may be so intense as to lead to gangrene. It may occur after trauma, such as fracture or in war wounds with constriction of the artery. Reischel observed 2 cases of segmental spasmotic constriction of a large vessel after trauma. According to Oppel, spontaneous gangrene may result from the over action of adrenalin causing ischemia with trophic disturbances in the arterial walls. For Raymond's disease, which is distinctly vasomotor disturbances with local syncope and asphyxial attacks and its gangrene as terminal phenomenon, Leriche has performed sympathectomy twice and the author once. In the author's case, that of a

man aged 70 years, the operation was performed on both brachia; the results were good. After suggesting treating acrocyanosis by sympathectomy as an experiment to determine the permanency of the vasodilation.

In the second group, the only pathology noted, if any is an adhesion of the vessels to the common sheath or an increase in the vascularization of the adventitia. Leriche ascribes trophic ulcers following nerve section to a disturbance of sympathetic innervation. Injury in regions remote from the large blood vessels may be accompanied by pain or trophic changes. Leriche states that after injury in a zone rich in sensory innervation the vasomotor disturbances may be due to orthodromic or antidromic reflexes referred from the injured point to the peri-arterial sympathetic.

Sympathectomy has given good results in (1) cruralgia following war wounds, (2) certain painful crises preceding gangrene caused by obliterative endarteritis, (3) vasomotor trophic neuroses with contractures, (4) painful stump, (5) trophic ulcerations of stumps and extremities, (6) trophic edema, and (7) ischemic paralysis of the forearm. The author reports gratifying results in Raynaud's disease, cervical rib, a painful stump from amputation eight years previously, and trophic neuroses with contractures and pain in the foot. In a case of beginning gangrene of the toes with calcareous tibial arteries and severe pain the pain ceased and the gangrene cleared up. A case of gangrene of the fingers was distinctly improved. In one case of painful stump the treatment failed. Two cases of Buerger's disease were slightly benefited. In the case of an elderly woman with acrocyanosis and arteriosclerosis following wound infection, hemorrhage and death followed ligation of the femoral artery.

Cruralgia is painful vasomotor neurosis resulting from the irritation of a mixed nerve. Leriche's opinion it is due to neuritis of the peri-arterial sympathetic system rather than direct injury of the nerve trunk. In nine cases of cruralgia following war wounds in which Leriche performed sympathectomy the treatment failed completely in two, caused satisfying improvement in two, and gave an excellent result in five. Platon reports excellent results in eighteen cases in sixteen the pain stopped at once, and in two more gradually. Lewis reported instant relief in three cases of cruralgia treated by the intraneural injection of 60 per cent alcohol.

WALTER C. BURKET, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Keynes, G. Chronic Mastitis. *Brit J Surg* 9, 3, 21-30

In Keynes' opinion, the current ideas concerning chronic mastitis are vague and erroneous. He believes that only the more severe types of the condition reach the surgeon, and that the treatment given is often unsatisfactory.

This article is based upon a study of a mammary gland removed from every female body coming to postmortem room during given time, and upon male mammary glands, tissue removed from female patients operated upon for chronic mastitis, mammary glands removed because of carcinoma, and cases of chronic mastitis in which the condition was not severe enough to warrant operation. The autopsy material was carefully examined histologically, and the operating room material was studied histologically, bacteriologically and chemically.

The study of the pathologic changes in chronic mastitis followed a histologic study of the normal breast from fetal life until the completion of the postmenopausal changes. The physiology of the breast is discussed in detail because it is the key to the pathology.

If the disease is an inflammatory condition it would be expected that infiltration of the connective tissue with leucocytes would invariably be present. Such an infiltration is not always present. The connective tissue is not packed with leucocytes and the particular points of their concentration are in close relation to dilated acini along the course of the ducts. It is evident also that the round cell reaction is greatest when the lumina of the acini or ducts contain fluid rich in disintegrated cells particularly in breasts attempting to lactate. The predominant type of cell is the lymphocyte.

Other histologic changes are fibrosis, dilatation of the acini and ducts, epithelial changes of the lumens, and papillomat.

The condition is most commonly found in unmarried or childless women approaching the menopause. In such women it usually appears about ten years earlier than in women who have borne children. It is not rare in old men.

The author discusses the various theories regarding the cause of chronic mastitis but concludes that it is brought about by normal physiological processes in the breast. He considers the non-lactating breast an organ subjected to continual physiological stimuli but with no outlet for the products of its own activity. Resorption of the secretion must continually take place. The epithelial lining of the acini and the ducts is being constantly renewed and the old cells must be carried off. The breast is constantly pouring

an irritant into the lumina of the acini and ducts. When partial failure in the process of resorption occurs the irritation becomes increased and thus a vicious circle is established. The condition is not found in the lactating breast because the nipple is open allowing free drainage of secretions and epithelial debris.

A comparative study of the mammary glands of animals which normally lactate throughout life after sexual maturity failed to reveal the presence of chronic mastitis.

Chemical study of the fluids from cysts of the breast which the author was able to obtain proved them to be more or less irritating. A footnote quoting a recent publication by Drew calls attention to the fact that cellular growth is stimulated by the products of lysis of cells.

Keynes believes that the majority of the non-malignant conditions of the breast are simple clinical variations of chronic mastitis.

The breast tissue from cases of carcinoma studied by the author showed a marked increase in epithelial activity close to the advancing edge of the carcinoma. This fact suggests that the malignant cells might be influencing other cells through an irritating secretion. Drew is quoted also as pointing out that malignant tumor cells contain a substance which acts as a potent stimulus to cellular proliferation. From this fact the author concludes that chronic mastitis is a condition merely associated with carcinoma and should not be considered a precancerous condition also that carcinoma and chronic mastitis may be caused by the same irritant.

As proof that carcinoma may be produced by chemical irritants he cites the tar injections carried out in Tokyo.

The treatment Keynes suggests is surgery for the severe forms of chronic mastitis and the judicious application of the X-ray for the milder cases.

WILLIAM E. SMITH, CLINICAL M.D.

Mahler, G. E. Deep Roentgenotherapy in Carcinoma of the Breast. *Am J Roentgenol* 9, 3, 566

Cross firing is more difficult in carcinoma of the breast than in deeper carcinomata. The greatest possible relative depth dose must be delivered through the mammary region and this must be supplemented by addition from the axillary portal of entry and the posterior surface of the chest sufficient to make a total of about a 20 per cent erythema dose.

Frequently it will be impossible to deliver sufficient radiation throughout the tumor. In such cases the roentgen radiation must be supplemented by the insertion of radium needles emanation tubes.

It is the author's custom to use ray having an effective wave length of 0.17A produced by about 500 to 51 kV at a distance of 6 cm 4 ms with a filter of 0.5 mm of copper plus 2 mm of glass plus a 35-cm mattress. An erythema dose is obtained in about sixty minutes. As a rule one such dose is given on alternate days. Four portals of entry are used, the mammary region, the axillary region, the supraclavicular region, and the posterior thoracic region. This dose may be repeated after six weeks.

RALPH B. BETTMAN, M.D.

Graess E. Results of Postoperative Irradiation of Carcinoma of the Breast (Röntgen postoperative Mammarcarcinomabestrahlung). *Fortschr. d. Geb. d. Röntgenstrahlen* 9, 3, 333, 336.

The author reports the results obtained in seventy three cases of carcinoma of the breast treated by fractional doses of the X-ray. The cases were classified by Steinfeld method. The results with regard to three-year cures agree with those of the Kiel and Rostock clinics. After the fourth year there was marked decrease in the good results. In cases of recurrence which were not irradiated after the operation, second recurrence developed in 50 per cent after the fourth year. One half of the patients remained free from recurrence at the end of three years. *Reich (7)*

TRACHEA, LUNGS, AND PLEURA

Owen, H. R. and González, A. Pleural Epilepsy. *Ann Surg* 9, 3, Lxxviii, 6.

Pleural epilepsy is an epileptiform manifestation occurring when the pleural membranes are stimulated by physical or chemical agents. It occasionally complicates the surgical treatment of empyema. The first case of convulsions occurring during pleural lavage was reported by Roger in 1844. Since then about fifty or six such reports have been published.

Postmortem examination of fatal cases has failed to explain the cause of the condition, and its pathology also is very obscure. The exciting cause is usually the introduction of a foreign substance into the thoracic cavity.

Various theories have been advanced as to the etiology. The most important are the anaphylactic, the embolic, and the reflex. That the injection of water or bismuth paste could cause anaphylaxis seems improbable. The entrance of emboli into the systemic circulation without penetration of the lung tissue by a foreign substance is also difficult to explain. The reflex theory is the most satisfactory and is the only one supported by experimental evidence. The reflex appears to act through the pneumogastric nerves. The convulsion in pleural epilepsy is identical with that of adrenergic epilepsy. The diagnosis can usually be made from the negative history, the physical findings, and the fact that the convulsion develops during or immediately following surgical treatment of the pleural cavity.

The prognosis should always be guarded as death occurs in 35 per cent of the cases. A low blood pressure predisposes to a fatal termination. Many of these accidents can be avoided by using non-irritating antiseptic solution for pleural lavage and injecting it slowly without great pressure. The trocars used should be sharp and should not penetrate the lung tissue. The treatment is symptomatic. During the attack, strong sedatives and vasoconstrictors are of value. *C. J. Gaudier, M.D.*

McGulley, F. W. Lung Compression by Heavy Liquid Paraffin in the Treatment of Lung Tuberculosis, Bronchiectasis, and Lung Abscess. *Surg Gynec & Obst* 923, xxxvii, 20.

The author used heavy paraffin to compress the lungs of cats and rabbits. He found that when camphor anesthesia with nitrous oxide and oxygen was used he was able to inject from 150 to 200 ccm of oil without causing death, but that when the usual ether anesthesia was induced the animal died after 100 ccm of the oil had been injected. Complete atelectasis was not produced in any of his experiments. Besides a pneumonic process in the lung, the pleura and the soft parts of the mediastinum were diffusely thickened; the form of patches. The pneumonic process was discovered at autopsy. It had not caused clinical symptoms.

There was no absorption of oil by the circulation that which could not be recovered from the chest cavity in free state could be easily accounted for by accumulation in the tissues. In some cases the oil passed through the mediastinum to the opposite side possibly by a process of suction, and then became coarsely emulsified. In some instances it was transported through the lymph channels. Some of it was carried away also by phagocytes. Occasionally it became tied up in the proliferating process of the cells of the pleura and soft tissues as they became thickened. The authors affirm, however, that they were able to recover directly from the chest from 75 to 90 per cent of the oil injected. They believe that in the cases of patients, who could be kept at rest, even more of the oil would remain in the chest cavity. *RALPH B. BETTMAN, M.D.*

Jacobson, H. C. The Castration of Adhesions in Artificial Pneumothorax Treatment of Pulmonary Tuberculosis under Thoracoscopic Control. *Proc Roy Soc Med Lond* 9, 3, 214, Sect. Electro-Therap. 45.

Beginning with endoscopy of the peritoneal and pleural cavities as a diagnostic method, Jacobson perfected direct vision method of thoracoscopically examining and treating adhesions preventing complete collapse of the lung.

In a recent article by Graves the ankyrosis results of artificial pneumothorax when complete collapse of the lung is prevented by adhesions were discussed on the basis of cases traced from three to thirteen years after the operation. The outcome in these cases is shown in the following tables.

Table I—Cases of Complete Pneumothorax without Adhesions

	No.	Percent
Able to work	3	70
Not able to work		
Died from tuberculosis		3.4
Died from other causes		
Unknown		

Table II—Cases with Complete Pneumothorax, but with Extensive Localized Adhesions

	No.	Percent
Able to work	14	33.3
Died from tuberculosis	28	66.6

Table III—Cases with Pneumothorax Incomplete on Account of More or Less Extensive Adhesions

	No.	Percent
Able to work	5	
Died from tuberculosis	39	86.7
Died from other causes		

To date, about 200 cases have been operated upon by the Jacobaeus method. In this article Jacobaeus reports seventy-five cases and gives a detailed description of the technique employed.

The operation is performed under local anesthesia and is preceded by fluoroscopic examination. The trocar for the thoracoscope is introduced posteriorly at a point from one to three interspaces below the adhesions. The trocar for the galvanocautery is introduced either laterally or anteriorly. If the cautery is too hot it will burn the adhesions too rapidly and favor hemorrhage.

The simple cord-like adhesions are of difficult to treat without causing discomfort. The broad adhesions, especially those near the apex, which are usually short, are very much more difficult to cauterize and in such cases the operation is associated with considerable pain. It was noticed that the nearer the cautery was used to the chest wall the greater the discomfort.

The danger of cauterization is hemorrhage. Even when the greatest care is used, large vessels are occasionally encountered and burned off. In the opinion of the author a hemorrhage dangerous to life occurs only when an artery is burned through serious hemorrhage arises if during cauterization the lung is penetrated and an artery severed. A severe hemorrhage occurred in only one case treated by Jacobaeus. The best way to control hemorrhage is to increase the pressure within the pleural cavity as much as possible. This is done best by filling the cavity with salt solution.

The indications for cauterization are as follows: Cord-like adhesions up to the thickness of the little finger which are found by X-ray examination. These may always be burned off without great risk.

Membranous adhesions. The possibility of operating upon such adhesions is best determined by thoroscopic examination.

3. Surface adhesions. In cases with this type of adhesions great care is necessary. Only the granulation tissue which attaches the lung to the chest wall should be burned off. Cauterization of the lung itself is associated with the risk of hemorrhage and

the opening of tuberculous foci and cavities with consequent infection of the pleura.

The most common early complication of the cauterization is cutaneous emphysema. This may be troublesome for a day or two but then disappears. Of greater importance are the pleuritic exudates which may follow the operation.

The results in the seventy-five cases operated upon by Jacobaeus are shown in the following table.

Table IV—Results in Author's Cases with Regard to Exudate

	No.
Cases without exudate	36
Cases with slight exudate	9
3. Cases with long lasting exudate and fever (6 with exudate before operation)	
4. Cases with long lasting exudate and empyema (4 with exudate before operation)	7
5. Cases with exudate first appearing from one to three months after operation	3

In the first group of cases the result was very favorable. After a few days of fever the temperature again became as low as before operation. The results were favorable also in Group 1 in which there was slight exudate which did not reach above the dome of the diaphragm, in one or two weeks this disappeared completely. In the last three groups the operation was probably associated with unfavorable clinical progress.

The results in these seventy-five cases tabulated according to the location of the adhesions were as follows:

Table V—Results in Author's Cases According to Location of Adhesions

Adhesions	Cases	Complete collapse of lung	Good clinical result	Incomplete collapse of lung
Apex	10	9	8	
Lateral	6	44	4	7
Diaphragm	3	3		
Total	75	56	50	8

Jacobaeus concludes that although it has been impossible by his method to obtain clinical improvement in as high percentage of cases with adhesions as in simple uncomplicated pneumothorax without adhesions, the procedure should prove of value in a limited number of cases with cord-like or membranous adhesions. McMICHAEL HAWKINS, M.D.

Hampeln, P. The Frequency and Cause of Primary Carcinoma of the Lung (Häufigkeit und Ursache des primären Lungencarcinoms). *Mitt. d. Grenzgeb. d. Med. u. Chir.* 9: 2, xxvi, 145.

From all reports regarding the frequency of primary carcinoma of the lung it is evident that in the last decade the incidence has increased considerably. Previously the condition was very rare. Only one report, that of Lauche from Christiania, shows no increase (four cases in the last thirty-five years). In German hospitals seldom more than one case of primary carcinoma of the lung was formerly found at autopsy during the course of a year but

today several are discovered. Carcinomata of other organs have not increased to the same extent.

The author attributes the increase in carcinoma of the lung to the effect of street dirt. It has long been known that pneumoconiosis is a necropolis of the lung. The nearly complete absence of lung cancer in Christiansia may be explained by the dust free air in that city and confirms the author's theory.

VOY TARRIVER (J)

HEART AND PERICARDIUM

Levine, S. A., and Cutler, F. C. Cardiotomy and Valvulotomy for Mitral Stenosis. Experimental Observations and Clinical Notes Concerning an Operated Case with Recovery. *Boston M & S J* 1913, LXXXII, 3.

The case reported as presented before the staff of the Peter Bent Brigham Hospital in Boston on May 23, 1913, four days after an operative attempt to decrease tumours of the mitral valve. So far as the authors are aware, this is the only case on record in which such surgical attack on a mitral stenosis has been completed. Doven attempted similar operation, but his patient did not survive.

A great deal of pericardial work has been done on the production of valvular lesions in the heart. Of the many methods of approach suggested, the most successful are (1) incision by a valvulotome inserted through the pericardium, the aorta and (2) the incision of small knif through direct vision cardiostomy introduced through the left auricular appendage. By these methods it has been found possible to render the valves sufficiently defective for regurgitation but no investigator has been able to produce more than temporary stenosis.

The case reported was that of a girl, twenty years of age, who following attack of influenza in 1908, had a slight cough, intervals and some dyspnoea for ten years. These were aggravated by exertion and in the winter of 1912 even slight frost caused marked dyspnoea. During the six months from November, 1912, to May, 1913, the patient was kept in bed. An effort to get her up as followed by an increase in the pulse rate (130-140), severe dyspnoea, and frequent pulmonary hemorrhages.

The findings of the physical examination, laboratory tests, and X-ray examinations and the electrocardiograms confirmed the clinical diagnosis of mitral stenosis without cardiac reserve. The heart muscle appeared to be in fair condition.

Operation was performed under ether anaesthesia, the ether being administered during the operation by means of catheter passed into the oesophagus. The exposure was gained by Dr. Al Barstus median thoracic abdominal pericardiotomy. After the heart had been rolled out of its position several times to ascertain its dimensions, 0.5 cm of .000 solution of dresin followed by normal salt solution was dropped over it. The heart at once responded by vigorous and full contractions. It was then again rolled out and the right with the left hand and

with the right hand the valvulotome as plunged into the left ventricle at a point about 1 cm from the apex and away from the branches of the descending coronary artery, where two mattress sutures had been placed. The knife was pushed upward about 3/8 in until it encountered what seemed to be the mitral orifice. A cut was then made on turning it medially and again on turning it in the opposite direction. Considerable resistance was encountered. On withdrawal of the knife, the mattress sutures were tied. There was no bleeding. Hot saline solution was dropped on the heart, and its action continued good.

The pericardium and pericardium were closed with continuous silk sutures. The divided sternum was allowed to come together and encircled with silver wire. The pericardium was approximated by multiple interrupted sutures. The subcutaneous tissues and skin fine silk was used.

Immediately after the operation the general condition seemed good. At this time the pulse was 140, the respiration 24, the systolic blood pressure 80, and the diastolic blood pressure 40. During the first forty-eight hours it was necessary to use morphine to control the pain in the chest. During the second and third day signs of complications in the upper lobe of the right lung were noted, but these cleared up toward the end of the third day and an eventual surgical recovery resulted.

A careful study of the heart findings could not be made until after the fourth day. The diastolic thrill and murmur were then distinctly diminished. The apex and the apical systolic murmur was increased. A pericardial and friction developed and there was some evidence of pericardial effusion. The diagnosis was not confirmed by tapping because of the patient's condition.

In conclusion the authors state that at this stage of their observations they do not know definitely just what has occurred or what benefits, if any, have been gained from the operation. They do not feel very sanguine with regard to the latter but believe that if any improvement occurs in the patient's vital capacity this may be taken as definite indication that the stenosis has been somewhat relieved. The case demonstrates, however, that surgical intervention for the correction of mitral stenosis is without special risk and should encourage attempts to alleviate chronic condition for which there is no other treatment. McAllister Hueston, M.D.

ESOPHAGUS AND MEDIASTINUM

Glogau, O. Two Cases of Descending Retro-oesophageal Abscess with Phlegmon of the Neck and Threatening Mediastinitis; External Operation Through the Vascular Route; Prepharyngeal Collar Mediastinotomy; Recovery. *Laryngoscope*, 1913, LXXIII, 300.

In the first case reported, that of a baby 1 month old, a swelling on the neck was associated with difficulty in swallowing and breathing, a septic tem-

perature chills, and characteristic pressure pains along the muscle and in the jugular fossa. These symptoms pointed to a threatening mediastinitis due to the descent of a retro-oesophageal abscess which was detected on pharyngoscopic examination. The original cause of such descending abscesses in babies is usually a subcutaneous abscess in the vallecula.

In the second case the symptoms were similar to those in the first, but in addition there were pressure pains and swelling on the other side of the neck. The abscess cavity had already crossed the midline and was encroaching upon the vascular sheath of the opposite side. With the exception of a cold, no etiological factor was demonstrable.

In both cases there was a solid mass of indurated tissue around the vascular sheath. Only the thorough pharyngo-laryngoscopic examination, through which the level of the suspected pus cavity was ascertained, pointed the way and induced the operator to cut through the indurated mass in front of the carotid artery to evacuate the pus. The sealing of the apparently healthy anterior and posterior mediastinum prevented the pus from encroaching upon this important interstice between the vital organs and thereby warded off such dangerous complications as suppurative mediastinitis, pericarditis, pleuritis, lung abscess, and general septicæmia. The typical external drainage of the descending abscesses by way of the vascular sheath, combined with sealing of the mediastinum, proved to be life saving operation.

GUY L. BOWRE, M.D.

MISCELLANEOUS

Pinchin, A. J. R. Primary Intrathoracic Neoplasms. *Practitioner*, 935, 43, 44.

The author discusses some of the twenty cases of primary intrathoracic neoplasms that have come under his observation within the last twenty years.

Of the growths arising in the mediastinum sarcoma is the most common, while of those originating in the lungs, carcinoma is the most common.

Sarcoma usually occurs between the fortieth and fiftieth years of age and affects males more frequently than females. The symptoms may be slight. At first there may be dyspnoea, cough, and pleuritic pain but little sputum. Later the sputum may be profuse. Both in this disease and in carcinoma of the lung cachexia is not a definite sign until the later stages. Sarcoma arises in the lymphatic structures

of the thorax, molding itself around them. The nerves and arteries, though surrounded, are not disorganised, but the veins are frequently invaded. The growth spreads by direct extension usually invading only one lung more frequently the right. Finally because of the increase in the size of the tumor pressure symptoms are noted. The signs are as indefinite as the symptoms. In the early stages bronchitis may be present. As the mass increases the signs may become more obvious and include signs of pressure, retrosternal dullness, clubbing of the fingers, etc.

The condition must be differentiated principally from lymphadenoma, tuberculous, and aneurism.

In cases of lymphadenoma other glands besides the mediastinal nodes are involved, the disease usually appears later and crises often occur. The patient with tuberculous appears much sicker than the patient with neoplasm. The temperature curve in tuberculous is characteristic. In sarcoma there is usually no fever. In tuberculous affecting one lung there is retraction of the diseased lung with emphysema of the other. The term is not as more resonant, and the heart is displaced to the affected side. In cases of neoplasm the sternal note is dull even if the lung is collapsed, and the heart is little displaced. In tuberculous the breath sounds are mottled, and in sarcoma if cases of sarcoma the condition is confined to the mediastinum, both lungs will be clear while if it has involved one lung the other pericardium at least will be free. This is much less to be true in tuberculous. The differentiation of aneurism may be very difficult. Pain is usually more severe in aneurism and oedema and enlargement of the veins are rare.

Primary carcinoma is more common than is generally believed. It usually occurs somewhat later in life than sarcoma. It may manifest itself as circumscribed lobular, diffuse lesion and its symptoms vary accordingly. As a rule it is unilateral. Bronchiectasis is common. The tumor is apt to undergo degenerative changes. Cough is usually the earliest symptom. Hemoptysis also occurs early. The differential diagnosis from tuberculous is difficult. A flat percussion note, absence of the tubercle bacilli, absence of fever, absence of signs at the pericardium, large lung area without signs of cavity formation, speak in favor of carcinoma and against tuberculous.

RALPH B. BRITMAN, M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Gallie W. E., and LeMessurier A. B. Living Sutures in the Treatment of Hernia. *Canadian Medical Journal* 9 3, 220, 469

In the authors' opinion the recurrence of hernia after operation is due largely to the ineffectiveness of the type of operation performed rather than lack of skill on the part of the operator or faulty after treatment. In experiments on rabbits in which they tested various kinds of suture material they found that the usual amount of scar tissue forming after the division of fascia and aponeurosis was not sufficient to withstand the strain to which these structures are normally subjected and that overlapping and suturing the edges of the divided fascia and aponeurosis increased the probability of permanent union. When sutures of living fascia were used the results were very much better as these became folded into rounded cords of great strength. Such suture is better than catgut as it is not absorbed and continues for all time to perform the function for which it was intended. It is preferable to non-absorbable materials such as linen and silk because it is composed of living tissues which are non-irritating and heal solidly into the structures through which they pass without showing any tendency to cut out when they are subjected to ordinary physiological strain.

In the insertion of fascial suture needle with a large eye is used. Catgut is tied around the end of the fascia to prevent splitting, and every second or third stitch is anchored by slip knot. When the first suture has been used up a second may be attached to it in the same way as pieces of tennis gut are fastened together and the sewing continued.

The general plan of the authors' operation resembles that of the Bassini operation. The sac is removed and the various muscles and fascia are thoroughly cleared. A piece of fascia lata about

in long is removed from the opposite thigh and threaded on needle with large eye. The first anchoring suture is passed through the rectus sheath and muscle close to their attachment to the pubic bone and then securely fixed into the perosteum and the termination of Poupart's ligament. The suture is continued outward, fixing the internal oblique muscle to Poupart ligament, and after knotting, continued backward as a second suture line superimposed on the first. These sutures are drawn sufficiently tight to make them lie flat but no attempt is made to draw the aponeurotic structures tightly together. The external oblique is either closed with catgut or woven together with a narrow strand of fascia.

In a series of sixty difficult cases operated upon by the authors in this manner there have been no

recurrences after a period of at least two years. The procedure is indicated especially in all cases of direct hernia and all cases of oblique indirect hernia occurring for the first time in persons of middle age or older. It is, of course unnecessary in children and young adults with recently discovered oblique hernia.

Theoretically this type of operation would be of equal value also in cases of femoral hernia. The femoral ring could be closed off effectively by a strip of fascia anchored into Poupart ligament and crossing the mouth of the crural canal to second anchorage in the pectineal fascia or the perosteum of the ramus of the pubic bone. C. J. GLENN, M.D.

Dowd, C. N. Tuberculous Peritonitis. *Am Surg* 9 3, 129, 63

The patient whose case is reported as first operated upon by Dowd when she was 5 years old. A simple laparotomy was done. The peritoneum was found studded with tubercles, the omentum had become a contracted mass, and a large quantity of ascitic fluid was present. The patient then remained comparatively well for several years. Fifteen years later she was again operated upon because of attacks of vomiting and pain in the region of the appendix. At the second operation the peritoneum was found free of tubercles. Adhesions had formed about the uterine appendages, and the appendix was burned by them. The walls of the caecum were thickened. Microscopic examination of the removed appendix revealed no evidence of tuberculous.

Following this operation the patient was apparently well for five years but then had recurrence of the attacks of pain in the lower abdomen. At a third operation the peritoneum was found to be free of tubercles. The tubes and ovaries, which are encased in inflammatory tissue, were removed. On microscopic examination the condition proved to be bilateral tuberculous salpingitis. Since this operation the patient has remained well and free from pain, and in the last year has gained 24 lbs.

This case demonstrates the ability of the body to take care of general peritoneal infection and proves that tuberculous of the pelvic structures is very persistent. L. L. G. BRIDGES, M.D.

GASTRO-INTESTINAL TRACT

Blackburn, C. B. The Nervous Mechanism of Functional Disorders of Digestion, with Special Reference to Hypertonic and Hypotonic Dyspepsia and Nervous Colitis. *Med J Australia* 9 3, 4, 45

While the term functional disorder implies absence of organic disease, there is always an under

lying cause and for this a careful search must be made.

The direct control of the digestive functions is in the sympathetic nervous system, but as there are numerous connecting paths with the central nervous system and with such independent nerves as the hypogastric and glossopharyngeal, many outside influences may be of importance. There seems to be no doubt that afferent impulses reach the brain from the digestive organs but these are probably taken care of by the subconscious mind.

Psychic influences have an effect upon digestion and in hyperexcitability of the central nervous system afferent impulses may have an abnormal effect. In a person with nervous dyspepsia the common peripheral reflexes are often greatly exaggerated. During nervous strain, indigestion is a frequent complaint. In fluoroscopic studies of the stomach in a number of cases of nervous patients made during the war the author found hyperperistalsis and shortened emptying time.

As the alimentary tract is under the control of the splanchnic nervous system, disorders of any on section should be considered in the light of their effects upon the entire tract. The dyspepsia associated with disease of the gall bladder and the colitis so often associated with appendicitis are concrete examples. The treatment should be directed toward removal of the cause, but the author warns against the indiscriminate removal of the appendix for colitis because the latter probably antedates the appendiceal inflammation. Appendectomy must be regarded as merely an adjunct treatment.

Blackburn directs attention to the relation between septic conditions of the mouth, nose and throat and functional disorders of digestion.

Persons with colitis often eliminate from their diet one article of food after another until they are in condition of inanition and vitamin deficiency.

In functional dyspepsia the symptoms and complaints are extremely variable. Pain and discomfort may be located anywhere in the abdomen, but are not as apt to be constantly limited to a definite area as in organic disease. Flatulence and gas are common complaints and persons so troubled rapidly acquire the habit of alternately inflating and deflating the stomach. Drowsiness after meals followed by profound depression and extreme exhaustion is a fairly certain sign of hypersecretion of highly acid gastric juice.

In making diagnosis it must be borne in mind that the functional dyspeptic may vary his symptoms from day to day. X-ray studies are valuable because they definitely indicate whether the stomach is of the hypertonic or the hypotonic type. Frequently definite information of this kind will assist the patient in overcoming the trouble. It should be remembered that the chief factor in recovery will be the removal of the underlying cause. The patient's mental state insofar as it is affected by overwork, worry, domestic unhappiness and unrest, must be understood. As these patients frequently

fear a tumor or other organic disease, a complete X-ray study is helpful. The diet is of less importance than the manner of eating and thorough mastication of the food.

Drugs are sometimes useful. Bromides are employed for their sedative effect. Belladonna may be used in cases of hypertonic stomach. Strychnine should be given only to the apathetic person with hypotonic stomach. Alkalies relieve the local gastric discomfort. Other measures such as rest, massage, the taking of holiday at regular intervals, postural treatment, and attention to associated conditions are not to be neglected.

VAN DER G. BUNNEN, M.D.

Cole L. G. Gastric Ulcers. *J Am Med Ass* 9:3
1933, 36.

Gastric ulcer can be diagnosed by means of the roentgen ray as definitely as fracture of an extremity and if the X-ray is properly employed it is far more reliable for the diagnosis of ulcer than the Wassermann test is for the diagnosis of syphilis. Moynihan says that 50 per cent of the diagnoses of gastric ulcer made by ordinary methods are erroneous, and that the roentgen ray is now an indispensable diagnostic aid.

The five different types of spasm are (1) the prepylorospasm, involving the pars pylorica (2) the pylorospasm, involving the pyloric sphincter (3) the postpylorospasm, involving the cap (4) the cardiac spasm, involving the cardiac orifice and (5) a narrow ulcer in the pars media.

Spasm of the stomach is manifested by (1) direct evidence (2) distortion of the rugae (3) a deep ulcer opposite the crater.

By serial roentgen examinations frequently repeated one may study the gross pathologic changes of gastric ulcer: the size and shape of the crater, the amount of induration surrounding it, its location in the stomach, and its increase or decrease in size during periods of exacerbation or recession of symptoms.

The diagnosis of gastric ulcer has been made from (1) the presence of fleck of barium subnitrate or barium in the crater of the ulcer (2) syndromes and (3) the morphologic changes in the walls of the stomach. The first two are unreliable, but the pathologic change in the wall of the stomach can be definitely shown and it is on this, and this only, that the diagnosis can be made accurately.

There are six types of ulcer: (1) the deeply penetrating (2) the burrowing (3) the large shallow florid ulcer (4) the small round or oval ulcer (5) the mucosal and submucosal ulcer and (6) the healed ulcer with gross hour glass contraction or slight dimpling of the mucosa.

The deeply penetrating ulcer involves all the coats of the stomach and is shown in the roentgenogram by definite signs: (1) diverticular projection from the stomach (2) burrow shadow at the lesser curvature (3) immovability of the diverticular shadow under palpation (4) the presence of bar-

much remains in the diverticulum (4) the presence of a hemispherical gas bubble above the bismuth patch (5) sharply defined drawing in of the greater curvature causing the so-called hour glass constriction (6) displacement of the pyloric portion of the stomach to the left, especially noticeable in males, with nearly vertical position of the lower part of the greater curvature (7) marked diminution in the motility of the stomach (8) antiperistalsis of the stomach (9) the presence of a tender spot acutely sensitive to pressure (10) a sensation of resistance, and situated above the umbilicus in the region of the left rectus muscle. This type of ulcer is readily recognized by the fluoroscopic examination in a single plate.

The burrowing ulcer burrows toward the pylorus between the mucous and serous coat of the stomach stripping one coat from the other. The burrow filled crater has the appearance of a long tongue. This type of ulcer must not be confused with the penetrating ulcer which penetrates into adjacent viscera or under the liver.

The large shallow floor ulcer is easily recognized but difficulty is experienced in determining whether it is non-malignant ulcer or an ulcerating carcinoma. In cases in which the crater measures 3 cm. or more the surgeon during the operation or the pathologist on sectioning the specimen is often unable to determine whether the lesion is or is not malignant. Approximately 5 per cent are apparently malignant. The portion of the gastric wall which is infiltrated with small round cells and connective tissue is rendered less pliable than the normal gastric wall and therefore the peristaltic waves are obstructed as they progress toward the pylorus and the involved portion of the gastric wall which is outlined by the bismuth has constantly the same shape throughout.

Small round or oval ulcers have small craters which involve the mucosal, submucosal and muscular coat and sometimes cause localized peritonitis with adhesions to adjacent viscera but do not penetrate the viscera. The crater craters about 1 cm. in diameter.

Mucosal and submucosal ulcers have small shallow craters which often are not detected by surgical palpation or inspection. The surrounding stomach wall is so pliable that ulcers near the sulcus of the angle may fold on themselves, forming a pit-like ulcer similar to anal fissure and can be detected only by opening the stomach and examining the mucosal surface. As many ulcers lie near the pylorus findings must be considered. The results of healed ulcers vary from small slight scars which will not be noticed unless it is diligently sought to gross hour glass deformities.

Hour-glass deformity is frequently misinterpreted by the surgeon and the roentgenologist. It may be in both the prone and the erect positions or necessary for the diagnosis. A splenic sulcus or deep peristaltic waves on the greater curvature are frequently interpreted as an hour glass constriction.

It is probable that the hour glass stomach is some times formed sporadically but this must occur very rarely.

Dumping of the mucosal coat resulting from the healing of a small round or mucosal ulcer is due to scar tissue and is not an indication for surgery.
Howard A. McKenney M.D.

Fletcher H. Resection of the Stomach for Ulcer
Immediate Feeding with the Duodenal Tube
J Surg 92:100 773

The patient whose case is reported was a woman 40 years of age who complained of pain in the abdomen and loss of weight which had persisted for two months. The pain often began shortly after the ingestion of food. Attacks of nausea were frequent but not associated with vomiting. A diagnosis of hour-glass stomach with ulcer on the lesser curvature was made by X-ray examination.

At laparotomy the stomach and gall bladder were found buried by dense adhesions. The hour glass form of the stomach was due to a penetrating ulcer medial to the pylorus between the cardiac and pyloric ends. A Billroth resection was done, the entire pyloric region being resected.

After the posterior walls had been sutured and before the anterior sutures were introduced an Einhorn duodenal tube was introduced into the jejunum through the anastomosis. Immediately after the anastomosis was completed, on a whiskey and 3 oz. of ter at body temperature was given through the tube. Four hours later the administration of Einhorn feedings every 4 hours was begun. Water was given between feedings to relieve thirst. On the eighth day the tube was withdrawn and semi-soft diet then given by mouth. No pain, nausea, or any other inconvenience followed this procedure. The method was first reported by Anderson in *Annals of Surgery* 1908.

Harold M. Carr M.D.

Vaccari, G. Lipomata of the Intestine (Contributo allo studio dei lipomi dell'intestino) Arch Ital Chir 9:3, 1909

Vaccari finds only sixty-nine cases of lipoma of the intestine reported in the literature. His own case was that of a man 60 years of age. Examination led to the diagnosis of intestinal occlusion. On laparotomy a firm induration in the right iliac fossa was found to be an enlargement of the last portion of the ileum. This area the intestine was covered by exudate so hard that it resisted all attempts at dissection. Intestinal resection followed by terminal closure of the stump and side to side ileocolic anastomosis was therefore done. The patient died 10 days later. Autopsy revealed diffuse fibrous peritonitis. In this case all the chief symptoms of invagination were absent.

Early diagnosis and immediate operation are essential for good results in such cases as statistics show that the mortality is very high when operation is deferred until after forty-eight hours from the

onset of the abdominal symptoms. Vaccari did not see his patient until about sixty hours after the onset of the condition.

The muscular tissues of the intestine constitute a barrier to the development of lipomata arising in the intestinal wall. Lipomata which originate in the subserosa grow toward the intestinal lumen, and those which form in the submucosa have a tendency to rise from the slide of the peritoneal cavity. In examining the resected portion of the intestine in the case reported, Vaccari discovered that there were two distinct lipomata of the intestinal wall, one subserosal and the other submucosal, which were separated by a double stratum of more or less altered smooth muscle fiber circular and longitudinal.

Although several writers have suggested that lipomata neoplasms and true lipomata may be formed through metaplasia or degeneration of connective tissue cells, Vaccari did not observe any cellular elements demonstrating such a transition.

W. A. BRYCEMAN

Haden, R. L., and Orr, T. G. Upper Intestinal Tract Obstruction. *J. Missouri State M. Ass.* 923, 22, 85.

In a series of experiments upon animals the authors found that following upper intestinal tract obstruction there is a rapid fall in the blood chlorides and rise in the carbon dioxide combining power of the plasma. Later there is rise in the oxygen, nitrogen and urea nitrogen. The rise in nitrogen, however, does not occur until the chlorides have been depleted. The rise in the alkali reserve as evidenced by the increase in carbon dioxide combining power of the plasma is an incident in the chloride metabolism. The chlorine combines with the toxic body or bodies probably in the form of hydrochloride, and the sodium combines with carbonic acid to form sodium bicarbonate.

The rôle of the chlorides seems essentially protective, neutralizing, or antitoxic. Sodium chloride is very effective in the treatment of the toxæmia of intestinal obstruction. If it is given at the onset of the obstruction the rise in nitrogen may not occur. If it is given after the rise in nitrogen has begun, a rapid fall usually takes place. Since there is practically always heightened alkali reserve, alkalis should not be given. It is quite possible that similar treatment will be of value in other conditions characterized by similar chloride metabolism.

The dosage of sodium chloride should be regulated by the blood chlorides as the toxæmia varies in different cases. In dogs the initial dose is approximately 1 gm. per kilo of body weight in 5 per cent solution. In clinical cases as much fluid as possible should be given with the necessary amount of salt. The maximum amount of fluid which can be given will usually require at least a 3 per cent solution of sodium chloride.

CARL D. NEEDHAM, M.D.

Lepoutre and Mouchet. Intestinal Intussusception. Thirteen Cases of Acute Intestinal Intussusception in Infants (Sur l'insignation intestinale aigue chez l'enfant). *Bull. et mem. Soc. de chir. d. Paris* 93 xliv 387.

Mouchet discusses the salient points in thirteen cases of acute intestinal intussusception in infants from the service of Lepoutre of Lille. The condition occurs more frequently in young infants than is generally believed. Ten of the thirteen infants were less than a year of age and eight were males. The frequency of intussusception in the first year of life and the predominance of the ileocolic variety may be due to lack of fixity of the cecum.

Early operation is of importance if successful results. The findings of abdominal palpation may be masked by the liver contraction of the parietes, or distended intestinal loops, but the condition is indicated by paroxysmal attacks of violent pain associated with vomiting and the passage by anus of bloody mucus in the case of a previously normal nursing infant. If rectal examination is done early blood will be found on the examining finger before blood is expelled.

Before lump is palpable a careful examination demonstrates localized tenderness, resistance of the abdominal wall and firmer consistency of an intestinal segment than normal. Fever occurs in more than half the cases.

Of the thirteen infants whose cases are reviewed, one died before an operation could be performed and seven died after operation. Poulignon reports eleven recoveries in fourteen cases treated surgically and Peterson twenty-two recoveries in twenty-eight cases operated upon. In fifteen cases of intussusception in which Peterson did resection there were eleven deaths and four recoveries. Two of Lepoutre's cases treated by intestinal resection were fatal.

Reduction is usually possible when operation is performed early. In nursing infants, and especially when conditions are unfavorable, resection is extremely serious. According to Peterson, recovery results in not more than 20 per cent of cases so treated. Lepoutre therefore prefers forcing reduction at the risk of producing lacerations.

Operation offers the only chance of cure, but in certain cases which are late from the onset death results within a few hours in spite of very early surgical treatment.

In one of Lepoutre's cases, that of an infant aged 9 months, in which the abdominal wall was closed in three layers and an adhesive plaster applied, the wound broke open during violent attack of coughing on the seventh day and loop of intestine appeared. Several hours later the testine was reduced under anesthesia and the abdominal wall sutured in mass with silk suture. The child recovered. Postoperative emaciation followed by death a few hours later occurred in two of Mouchet's cases. Ombrédanne states that the constant straining of

the infant is sufficient to break the sutures. Mouchet holds that the reduced invagination invites sepsis and an attenuated infection interferes with the healing of wound edges. Savarynaud maintains that eversion will not occur if the aponeurosis is sutured with horsehair or silk. Broca states that in the cases of nursing infants it is important to leave the laparotomy suture in place for a long time. According to Vesu, the abdominal wounds of nursing infants do not coarctate as well as those of children. Therefore he leaves a fenestrated adhesive plaster on the wound for at least twenty days. Ombredanne removes the stitches on the eighth day while supporting the abdominal wall about the wound between the thumb and index finger to prevent eversion, and after cleansing the abdomen, applies a suitable compress and adhesive plaster bandage which is changed as necessary during a period of thirty-five days. Mouchet recommends wrapping a plaster several times around the abdomen.

Relapses are rare. In forty-six cases reported by Peterson there were two recurrences. It is possible that they may be prevented by fixation of the intestine or appendectomy. Ombredanne and Mouchet believe that in cases of old intussusception, difficult reduction, large mesenteric glands, and an indurated toxic wall of cecal wall, fixation is of little use and that quick action is of most importance. If the intussusception is recent, reduction easy and the intestine little altered, Mouchet fixes the external band of the cecum and the first part of the ileum to the parietal wall. Jellinger, Grise, and Peterson hold that inflammatory changes in the appendix may act the spasm that originates the intussusception. Mouchet always does an appendectomy after reduction because of the change in the appearance of the appendix. Whether the condition of the appendix is primary or secondary has not been definitely determined.

Vesey states that occasionally an intussusception becomes very rapidly irreducible but Broca considers this exceptional. **WALTER C. BAKER, M.D.**

Muench, G. E. Unilateral Intestinal Exclusion.
Surg. Gyne. & Obst. 9, 3, 333-34, 1913.

Intestinal exclusion is an operation frequently indicated in abdominal surgery. It was first performed by Trendelenburg in 1885. Several years later von Hacker devised the operation for cases of fistula and adhesions of the bowel. Salzer reported its use in cases of tumor of the cecum in which resection of the cecum was not advisable or possible. Von Heberer working in an Eschschberg's clinic, first described the technique accurately on the basis of a large number of animal experiments and extensive clinical experience.

By unilateral exclusion, Muench means the procedure by which the gut is completely severed and the proximal end is implanted into the side of the distal end. The method has met with approval among English and American surgeons

as Moynihan, Warshaw, and Keen are of the opinion that it has no advantages over entero-anastomosis except in disease of the ileocecal valve. It must be admitted that back flow or regurgitation of fecal material is not always eliminated.

Muench meets this chief objection to the operation by citing eight clinical cases. In five cases of tuberculosis of the ileocecal valve and partial intestinal obstruction in persons ranging from 1 to 35 years of age he resected the ileum just proximal to the valve and, after closing both ends of the small bowel, implanted the distal end of the ileum into the transverse colon. All of these patients have remained well for from four to seven years after the operation. In the three additional cases the operation was performed for adhesions obstructing the ascending colon subsequent to appendiceal peritonitis, for adhesions due to tumor of the hepatic flexure of the colon (inflammatory) and for an infiltrating, adherent, inflammatory tumor of the ascending colon which did not permit resection. In all of these cases convalescence was uneventful and the relief has been permanent. Three patients of this series have been examined with the X-ray to determine whether or not there is regurgitation of fecal material. This was found in only one and as without clinical symptoms.

In explaining the regurgitation the author states that in the ascending colon there are antiperistaltic waves which bring the fluid feces back to the cecum several times. If the ileocecal valve is competent, peristaltic waves force the feces onward toward the anus when the quantity in the ascending colon has reached certain volume.

In a few cases the regurgitation and consequent dilatation of the bowel have necessitated later resection. De Quervain reported such cases and suggested that in intestinal tuberculosis and cancer the intolerance of the ulcerated bowel sets up a hypermotility of the affected segment which empties it rapidly and does not permit regurgitation with absorption.

The author concludes that the operation of unilateral exclusion is indicated chiefly in ileocecal tuberculosis when resection is contra-indicated, in inoperable cancer of the colon and in inflammatory and malignant tumors causing strictures of the bowel. It is superior to simple entero-anastomosis because it eliminates strain on the structured area, and is better than bilateral exclusion because external fistula is avoided. **JOHN H. N. COX, M.D.**

Friedenwald, J. and Wiert, F. F. Some Observations on Duodenal Alimentation. *N. York J. & Med. Rev.* 923, 1911, 855.

In the authors' method of giving duodenal alimentation the tube is swallowed to the 55 cm. mark in the morning, a small glass of water is given to increase peristalsis, and the patient, lying on his right side, is then required to make slow swallowing movements which will gradually pass the tube to the 75 cm. mark.

To determine whether the tube is in the duodenum or not, one of several methods may be used. One is aspirating with a syringe, a slight yellowish (bile-stained) fluid indicates that the tube is down far enough. Another method is the injection of air from the syringe. A loud gurgling sound indicates that the end of the tube is in the stomach, and a fainter and more distant gurgle that it is in the duodenum. If the tube is only in the stomach the air can be withdrawn, but when it is in the duodenum this is impossible. If these methods fail, fluoroscopy will clearly show the position of the bulb.

When the tube is securely placed, any liquid food may be administered. The authors prefer a mixture of milk sugar and raw egg. At first, the amount should be 100 cc every 10 hours. Alimentation should be begun early in the morning and discontinued late in the evening. The quantity of the milk and egg mixture may be increased gradually up to 300 cc. No unfavorable effects due to the metallic bulb have been observed. The mouth should be frequently rinsed with an antiseptic wash.

Satisfactory results have been given by this treatment in cases of gastric and duodenal ulcer of a severe type, atony associated with prolapse of the stomach and intestine, the vomiting of pregnancy, nervous vomiting, and cases of surgical operations on the stomach in which nausea, vomiting, and discomfort recurred. A number of cases are quoted.

ROBERT M. GARZA, M.D.

Wheeler, H. Duodenal Motility. *N. York M. J. & Med. Rev.* 923 cxvii, 65.

Recent studies of a number of experimenters, including Cole, Lockhardt Phillips, Carson, Wheeler, and Thomas, have pointed to the conclusion that, in principle, the sphincter acts in the same way as any other portion of the gastro-intestinal tract, the differences depending upon differences in the mass and gradients of contractile units.

The striking difference between gastric and duodenal motility is the apparent absence of segmental contractions in the stomach. Alvarez claims, however, that movements slightly resembling such contractions have been seen recently in the fundus. In the duodenum this condition must be brought into correlation with peristalsis.

In repeated animal experiments it has been shown that the sequential contraction of the duodenum when occurring in a series of repeated variations, arises from a low tone level and increases rapidly to reach its maximum synchronously with the closure of the pyloric sphincter. The second contraction, although arising from a higher level, is completed after the stomach has begun to relax and while the peristaltic wave in the duodenum is announced by the increased activity of the sequential contractions. The first segmental contraction in the duodenum following the arrival of the peristaltic wave is completed synchronously with that of the sphincter about three seconds after the beginning relaxation of the antrum. The first segmental contraction then en-

tering upon its positive phase acts to carry on the function of the pyloric sphincter. In that its positive phase is completed along with that of the sphincter and while the peristaltic wave is gaining strength in the duodenum. Once the positive phase of the peristaltic wave is established, the sphincter need no longer remain closed because the gastric (antral) portion is in a state of relaxation preparatory to the passage of a succeeding peristaltic wave.

In conclusion the author makes the following statements:

In the duodenum of the experimental animal two types of motility are noted: first, segmental contraction, and second, peristaltic waves.

1. Peristaltic waves in the duodenum bear a definite relation to the sequences of motor activity in the antrum and pyloric sphincter.

2. Hence, peristaltic waves in the duodenum may be considered as having their origin in the stomach.

ROBERT M. GARZA, M.D.

Brathwaite, L. R. The Flow of Lymph from the Ileocecal Angle and Its Possible Bearing on the Cause of Duodenal and Gastric Ulcer. *Brit. J. Surg.* 9:32, 7.

Brathwaite's interest in the flow of lymph from the ileocecal angle began with a case diagnosed as acute appendicitis in which the appendix was found only slightly congested but the ileocecal glands were jet-black and a chain of jet black glands could be traced up to the duodenum and the superior mesenteric vessels. There were also two black glands on the greater curvature of the stomach, 1 in. from the pylorus. The pathologist's report on the appendix and glands from the ileocecal angle and stomach groups stated that there was no evidence of malignancy. The proximal third of the appendix mucosa was deeply pigmented, and microscopic study showed masses of pigment inside the phagocytic cells disseminated in the interglandular tissue and following the vascular channels. The glands were abnormal in their central sinuses, containing plasma and no lymph.

Since the observation of this case Brathwaite has tested the normal flow of lymph from the ileocecal region by postmortem injections and animal experimentation and by the injection of indigocarmine on the operating table. In this manner it was found that there is no communication which passes from the appendix to the lymphatics of the pelvis, that few vessels pass to the retroperitoneal space in the right iliac fossa, and that the dye passed repeatedly inward to the small intestine and outward to the ascending colon and sometimes to the glands around the trunk of the superior mesenteric artery. Most of the lymph passed deeply to join the lumbar group, some of it passed upward over the head of the pancreas to the group of glands along the inner border of the curled duodenum, and some passed through this group to the duodenal wall itself and occasionally beyond the pylorus, in two cases reaching the chain of glands along the common duct.

Further investigation determined the flow of lymph through the omental lymph vessels which carried the dye more slowly to the greater curvature of the stomach.

Studies of lymph gland pathology and cases in which the lymph glands were tied showed berrant or retrograde flow of lymph.

The author concludes from his investigations that dyspepsia, duodenal and gastric ulcers, cholecystitis, and even gall stones may arise from appendiceal infections.

WILLIAM F. SHAW, JR., M.D.

Girode and Delbet: Eight Cases of Perforated Duodenal and Gastric Ulcer (Huit observations d'ulcères duodéno-gastriques perforés). *Revue Méd. Soc. d. M. de Par.* 9, 3, 24, 34.

This article reports seven cases of perforated gastric ulcer and one case of perforated duodenal ulcer. Three patients who were operated upon between thirty six and sixty hours after the perforation died immediately after the operation. One who was operated upon in the tenth hour died of pleurisy. Four recovered. Five patients had no history of gastric trouble, two had been treated medically for gastric conditions and one had had gastro-enterostomy. Of those who recovered one was operated upon six hours after the perforation, one at the end of ten hours, and the latter forty eight hours.

Some of the factors having bearing on the prognosis are the length of time lapsing between the perforation and the operation, the size and site of the perforation, the presence of adhesions, the character and quantity of the stomach contents, and the amount of gastric secretion. A histological study of the gastric contents was made in four cases. In two there were found to be aspic acid and in two septic. The two septic contents were fatal.

In most cases the author resected the ulcer and closed with a suture perpendicular to the axis of the intestine in order to enlarge the caliber of the area operated upon. The technique of the ordinary pyloroplasty technique.

RENE JEAN, M.D.

W. H. A. J. Glanzert: Gastric and Duodenal Peptic Ulcer (Über Frage der Vererbung des Ulcus pepticum duodeni). *Arch. f. Path. Anat.* 9, 3, 11, 12.

Recent investigations, chiefly those of Hirt and his co-workers, have shown that duodenal ulcer occurs and heals with scar formation much more frequently than has been believed up to the present time. Such ulcer scars are found about constantly in the sixth, seventh and eighth decades, but occur also in infancy (polyptosis) and in the thirtieth and fourth decades.

The authors examined nine cases macroscopically and microscopically. Most of the scars were on the posterior wall of the duodenum, an ulcer on the anterior wall has much slighter tendency to heal. The appearance of the scars varies greatly with

there are star shaped figures in the mucosa. In other cases there are elevations of the mucous membrane which lead to an ulcer situated in the horizontal portion. This type of scar gives rise to an diverticula which begin as a pocket like, flat depressions at the side of the ulcer scar and may become converted into deep sacks by the pressure of the intestinal contents. The explanation for this is found in the fact that in the upper horizontal portion the duodenal wall is thin and fixed. Most diverticula are situated above or below the anterior or post.rior walls.

Such scars do not lead to stenoses, and sometimes develop much less frequently in an ulcer of the duodenum than in an ulcer of the stomach. It is worthy of note however that the scars of duodenal ulcer are associated with hypertrophy of the pylorus which may be attributed to spasm. Scar tissue was always found in the depths of the ulcer, extending into the submucosa layer, the entire portion of the intestinal wall, muscularis, and submucosa with Brunner's glands, as well as the entire wall, had been destroyed, callous change of the wall was not found.

RENE (2)

Fischer, H.: Primary Ulcer of the Jejunum. *Am. Surg.* 9, 3, 133, 134, 775.

The case reported was that of a woman 37 years of age who entered the hospital for the relief of intermittent gastric pain, dyspepsia, profuse night sweats and slight hoarseness. The attacks of pain originated in the epigastrium, radiated to the back, and persisted for from 10 hours to five days. She had begun several years previously and seemed to have no relation to the ingestion of food. There had been no vomiting. During the past two years, eructa, palpitation and chills had occurred at definite intervals.

The patient remained at the hospital for two weeks and was given a thorough examination. The only positive findings were occasional epigastric and faint systolic murmur at the apex which was not transmitted. The blood count showed a leucocytosis (15,000 leucocytes, 75 per cent polymorphonuclears, and 25 per cent lymphocytes). The hemoglobin was 55 per cent and the blood pressure 110/70. The Wassermann test, the examination of the feces and the X-ray examination were negative. The patient was discharged with a diagnosis of intestinal ulcer.

Later she was readmitted to the hospital and was given a thorough examination. The only positive findings were occasional epigastric and faint systolic murmur at the apex which was not transmitted. The blood count showed a leucocytosis (15,000 leucocytes, 75 per cent polymorphonuclears, and 25 per cent lymphocytes). The hemoglobin was 55 per cent and the blood pressure 110/70. The Wassermann test, the examination of the feces and the X-ray examination were negative. The patient was discharged with a diagnosis of intestinal ulcer.

Two weeks later she returned to the hospital. The only positive findings were occasional epigastric and faint systolic murmur at the apex which was not transmitted. The blood count showed a leucocytosis (15,000 leucocytes, 75 per cent polymorphonuclears, and 25 per cent lymphocytes). The hemoglobin was 55 per cent and the blood pressure 110/70. The Wassermann test, the examination of the feces and the X-ray examination were negative. The patient was discharged with a diagnosis of intestinal ulcer.

point an induration of the jejunum, the size of a quarter was found. A diagnosis of primary ulcer of the jejunum was made and a retrocolic duodeno-jejunosomy was performed. Vomiting which occurred during the first twenty-four hours, was relieved by gastric lavage.

Four months later the pain was gone, the patient had gained 150 lbs and her appetite had returned, but there was still evidence of blood in the stools. In Frecher's opinion there is possibility of malignancy.

HAROLD M. CAMP, M.D.

Hewes, H. F. Infectious Colitis. *Boston M & S J* 923, clixviii, 994.

Jones, D. F. The Surgical Treatment of Ulcerative Colitis. *Boston M & S J* 923, clixviii, 999.

Hewes states that the genesis of infectious colitis is not definitely understood. The condition may appear as a sequel to an infection or debility. It is characterized by edema and engorgement of the laminae, profuse exudate, and, in severe cases, ulceration of the mucosa.

The cardinal symptoms are diarrhea and prostration. There may or may not be abdominal soreness or pain. Nausea, vomiting, fever and leukocytosis are often present.

The stools are usually small and loose and contain mucus, pus, and blood. No specific bacteria are found.

On proctoscopic examination the mucosa of the rectum and sigmoid is found to be diffusely reddened, swollen, and edematous, with much exudate and often with small bleeding points.

Tuberculosis and specific dysentery are ruled out by bacterial examination.

Cases of ulcerative colitis may be divided into three groups: (1) acute colitis of moderate severity; (2) acute fulminating ulcerative colitis; and (3) chronic or recurrent infectious or ulcerative colitis.

In the first group the condition persists for from one to four weeks, often follows infection, and becomes cured under medical treatment consisting of an initial dose of saline cathartic followed by continued colonic irrigations with salt solution three or four times a day. After a period of twenty-four hours in which no food is given, a diet of lean meat, wheat gruel, and twice baked bread without butter is allowed. Bismuth may be administered. The patient is kept in bed.

If this treatment does not cure the condition is severe and surgical measures are necessary.

In the acute fulminating type there is blood in the stools. The symptoms are extreme, there is great prostration, and death may follow in a few weeks in spite of treatment. An ileostomy should be done and the colon irrigated regularly with salt solution. If this does not check or cure the disease colectomy is indicated.

In the chronic cases there is a history of many attacks with gradual loss of strength. The characteristic X-ray picture shows absence of haustration in all or part of the colon. Ulceration may have

resulted in constrictions of the lumen at certain points.

Cases of diarrhea secondary to dietary faults and systemic diseases do not show the definite lesions of the mucosa on proctoscopic examination. This will also differentiate cancer. Infectious dysenteries are discovered by isolation of the specific organism.

In all serious cases an ileostomy with complete cleansing of the colon is indicated. Colectomy should not be done until other methods have been given a trial. In mild cases appendicectomy may give results. The opening should not be closed in less than a year.

Jones emphasizes the fact that in this disease the entire colon is involved from the anus to the ileocecal valve.

In the milder cases appendicectomy is done (cecectomy if the appendix has been removed) followed by irrigation of the colon. In severe cases ileostomy and colectomy are necessary. It is important to explore the entire large bowel. The colon is thickened, its capillaries are engorged, and the first row of glands are enlarged.

The disease may top at one of the flexures, but this is rare. The lumen may be greatly narrowed. Jones has never seen involvement of the ileum.

CLAYTON T. ANDREWS, M.D.

Gottlieb, A. Colon Anastomosis in Ileocecal Inversion (Kolostomie bei Inversion des Cecums). *Zentralbl f Chir* 93, 1438.

The author describes an operative procedure for the treatment of intestinal invagination described by Witzel and reports a case successfully performed upon in this manner that of a child 6 months old. The operation consists of disinvagination followed by the application of Witzel's fistula and the placing of the tube in the terminal coil after opening of the cecum. The tube is led into the lower end of the ileum through Bannum's sleeve and serves to evacuate gas and feces. The abdominal wound is sutured as far as is lower angle where the tube projects.

The advantages of this procedure are that it consumes little time, recurrence is prevented by the tube, and the fistula closes spontaneously after the removal of the tube.

The method is indicated for the prevention of postoperative injury following disinvagination in cut cases, and for palliation when an attempt at disinvagination fails and the patient's condition will not permit resection.

DUNNERT (Z)

Craig, W. M. and MacCarty, W. C. Involvement of the Lymph Glands in Cancer of the Cecum. *A Surg* 95, lxxvii, 698.

Involvement of the lymph glands in carcinoma has long been recognized as an index of the extensiveness of the lesion as well as an aid in prognosis. Carcinoma of the cecum confirms this belief.

Anatomists and physiologists have shown that the cecum has a definite and well organized lymph

phatic drainage which is a part of the ileocolic system. This ileocolic division of the lymphatics accompanies the ileocolic artery from its origin and is so closely associated with it that the branches of the lymphatic system derive their names from the neighboring arterial branches. Thus we have the anterior and posterior ileocolic lymph vessels and glands as well as the appendicular ileal, and right colic vessels and glands.

As carcinoma is disseminated through the lymphatic system and the regional lymph glands, the point of initial metastasis, series of 200 operative specimens were studied by Craig and McClary to determine the extent of metastatic involvement of the glands. As there are five divisions of the lymph channels and glands, it was necessary to determine also which one is most often involved. Each specimen was dissected out with care that all glands were found, and was studied microscopically for evidence of malignant involvement.

In order to organize the material into a classification as simple as possible the cases are grouped as follows: (1) cases in which there was no glandular involvement; (2) those with glandular involvement; (3) cases of colloid carcinoma. (a) with glandular involvement and (b) without glandular involvement.

One hundred pathologic specimens and 1,033 associated lymph glands were examined. In 32 per cent of the cases there was metastatic involvement of the regional lymph glands. Lymph glands were found which were normal in consistency yet palpable and plainly visible to the naked eye. The size of the intestinal lesion and the size and number of the regional lymph glands proved to be no criterion of the presence or absence of metastasis. Lymph glands simulating carcinomatous glands in size because of marked cellular infiltration and lymphadenitis were found to be inflammatory. Glands too small to be palpated at the time of operation were found to be the seat of metastasis. The cases with glandular involvement also showed large and numerous inflammatory glands which could be distinguished only by the use of the microscope. Cases which showed involvement of a large number of glands pathologically usually proved to be highly malignant clinically. Predominance of the posterior ileocolic lymph glands is of significance as 71 per cent of all glands found and 64 per cent of those which showed metastatic involvement were in this region. Carcinoma throughout local metastasis usually protrudes into the lumen rather than penetrates the wall of the caecum while those with metastasis usually involve the wall. The most common site is the posterior wall.

Carcinoma of the caecum occurs most frequently in the fourth decade of life. Of the cases studied, 66 per cent were those of males.

Cases of annular carcinoma or those in which all of the wall was involved made up nearly 45 per cent of the series. In 35 per cent the growth as confined to the posterior wall. This explains why the pos-

terior ileocolic lymph glands were the chief area of metastasis and inflammatory reaction. The growth was confined to the anterior wall in 23 per cent of the cases. The ileocecal valve was involved in 64 per cent. Colloid carcinoma was found in 20 per cent.

In conclusion the authors state that systematic microscopic examination is the only method of determining the presence of local or regional metastasis.

Aechner P. W. Subhepatic Abscess Secondary to Appendicitis. *N. York M. J. & Med. Ex.* 9:3, 1914, 670.

Abscesses following acute appendicitis are usually described according to their anatomical location. Those occupying a position below the right lobe of the liver in front of the kidney, and above the hepatic flexure of the colon, in Morison's pouch, have been classified inadequately as subhepatic abscess.

The right posterior intraperitoneal fossa or subhepatic fossa is a pyramidal space transversely disposed beneath the overhanging margin of the liver. Its base, and most capacious part, rests against the right lateral abdominal wall, projecting just below the last rib. Its apex is formed by the upward slope of the margin of the left lobe of the liver. The liver and gall bladder are its anterior boundaries throughout. Its posterior wall is formed by the upper part of the right kidney and the lower part and the cross of the diaphragm, and toward the left by the common bile duct and the duodenum.

To the left of the midline the fossa is a narrow cleft between the right lobe of the liver in front and the small omentum and the upper and anterior surface of the stomach behind. Above the subhepatic fossa is located on the right the right hepatic fossa of the liver and on the left by the falciform ligament of the liver and on the left by the transverse fissure. Below the boundary is formed on the left by adhesions between the margin of the liver and the anterior surface of the stomach, and on the right by similar adhesions of the great omentum and the transverse colon to the margin of the liver and the anterior wall.

A typical case of subhepatic abscess is that of patient operated upon for appendicitis with no previous operation who presents the usual post-operative improvement for one week or more and operative improvement for one week or more and polymorphous abscess. When the abscess is located in the right upper quadrant just to the right of the edge of the liver. Ultimately mass below the edge of the liver and tenderness in the deep in the right upper quadrant spaces and the teeth and in each right intercostal spaces and the costal arch are detected. As the mass may contain arterial supply to the liver, suppurative or abscess of the liver is suspected. The grave signs of to the liver is suspected. The grave signs of to the liver is suspected. The grave signs of to the liver is suspected.

Because of the onset of remittent or intermittent fever and the absence of subjective or objective symptoms to indicate the true lesion, wound retention, subphrenic infection, hepatic abscess or beginning pyelophlebitis are considered. Then as tenderness develops below the liver edge or in the costovertebral angle the kidney is suspected. Finally as the mass becomes palpable in the right renal area, an abscess of the kidney or a perinephric abscess cannot be excluded with certainty.

The inflammatory exudate may resolve. If suppuration supervenes, the abscess may drain by breaking into the bowel, but this occurs rarely. As a rule surgical drainage is indicated. The approach should be made through a loin incision which permits adequate exposure without the risk of soiling the general peritoneal cavity.

HOWARD A. MCKNIGHT, M.D.

Lockhart Mummery J. P. A New Method of Treating Ischio-rectal and Other Abscesses. *Proc Roy Soc Med Lond* 93 xvi Sect Surg 65.

The new method described is as follows:

The abscess is opened with a knife by a crucial incision in the usual way and the pus is allowed to flow out. The skin forming the outer wall of the abscess is then completely cut away so as to leave

a large opening an inch or more in diameter. The interior of the abscess is untouched. A large flat moist antiseptic gauze dressing is then applied and covered with a protector to keep it moist and prevent it from sticking to the edges of the wound and interfering with drainage. The pad is large enough to absorb all discharge for twelve hours.

When the dressing is changed it will be found that the abscess cavity has completely vanished, only a flat shallow ulcer remaining. The ulcer may take ten days or two weeks to heal, but does not result in fistula. The advantages of this method are (1) that it is very simple (2) that it is not in the least painful and (3) that healing is very rapid and is not followed by residual scars, a fistula or marked scarring.

CARL D. NEWBOLD, M.D.

LIVER, GALL-BLADDER, PANCREAS AND SPLEEN

Walcker F. The Collateral Circulation in the Portal System (Beiträge zur Collateralen Blutversorgung im Pfortadersystem). *Arch f Hist Natur* 921 cxx 84.

The author reviews the literature on this little known subject and reports the findings of his own research. Examination of 60 cadavers revealed hepatopetal anastomoses 5 per cent. In 4 per cent, accessory portal branches were found, which under certain circumstances would establish a collateral circulation if the chief vein were ligated. The subsidiary branches were at the most 2 mm in diameter. These relationships are shown by large number of illustrations. NORMANBY (Q).

Turner, G. G. A Case in Which an Adenoma Weighing 2 Lb 3 Oz. Was Successfully Removed from the Liver; with Remarks on the Subject of Partial Hepatectomy. *Proc Roy Soc Med Lond* 93 xvi, Sect Surg 43.

Wright G. Primary Carcinoma of the Liver Excised by Operation. *Proc Roy Soc Med Lond* 933 xvi, Sect Surg 56.

Frankau, C. A Case of Resection of the Liver for Malignant Disease Spreading from the Gall Bladder. *Proc Roy Soc Med Lond* 93 xvi, Sect Surg 59.

Turner P. A Case of Excision of an Adenoma of the Liver Which Had Ruptured Spontaneously Causing Internal Haemorrhage. *Proc Roy Soc Med Lond* 93 xvi, Sect Surg 60.

Kidd F. A Case of Primary Tumor of the Liver Removed by Operation. *Proc Roy Soc Med Lond* 933 xvi, Sect Surg 6.

G. G. TURNER reported a case of adenoma of the liver in a boy 15 years of age. A lump in the right side of the abdomen was noticed ten days before his admission to the hospital following an attack of pain. On examination a large lobulated mass could be seen and readily palpated in the upper right quadrant of the abdomen. It extended from the costal margin almost to the umbilicus and to the midline in front. On bimanual examination the mass appeared to extend from the right kidney behind to the abdominal wall in front and could be moved slightly antero-posteriorly. On percussion, there was dullness over the tumour with that of the liver above and of the kidney behind. There were no other noteworthy findings.

The symptoms, physical signs, and negative evidence led to the diagnosis of a rapidly growing unilateral renal sarcoma. A right rectus incision exposed a large lobulated tumor apparently arising from the right lobe of the liver. The left extremity of the tumor reached as far as the notch for the gall bladder. There was nothing suggestive of a primary growth in the abdominal cavity.

The pathological report based on the frozen section stated that the tumor was of an unusual type, composed of liver cells, and probably not very malignant. The gall bladder was removed with the tumor following its isolation and ligation of the cystic duct and vessels. The affected portion of the liver was drawn out of the incision as far as possible and the stomach and colon were well picked away with large gauze pads. A light bow-shaped stomach clamp with jaw 4 in long was applied on the tumor side of the proposed incision and slowly tightened until it had a firm hold. This provided convenient hands and helped materially in the subsequent manipulations.

With large fully curved intestinal needle threaded with No 3 chromic catgut, a series of sutures was then introduced into the liver substance on the proximal side of the proposed incision and parallel to it. These sutures were passed as deeply as possible into the liver tissue and almost reached the under surface. Each was locked to its fellow and separately tied.

the cystic duct To prevent this complication the autoplasmic knot used in ligating the ureter is recommended

GRAHAM (2)

Oliver, S. F. Studies on the Bile and Biliary Diseases. *Cincinnati J M* 923 IV, 86
Tashiro, S. The Determination of Bile Salts in the Blood. *Cincinnati J M* 923 IV, 97

St. does of the urine and blood show that in diseases of the liver and gall bladder there is hepatic insufficiency As a result of this the character of the bile is altered and biliary form of toxemia develops The severity of the toxemia is dependent upon the degree of the hepatic insufficiency There is direct causal relationship between the biliary intoxication and the development of cardiac and renal complications

In cases of gall tones successfully operated on there is a marked decrease in the bile-salt content of the blood In one case it dropped from 63.1 to 0.4 per cent The bile salt content of ascitic fluid collected from a case of cirrhosis of the liver was 0.22 per cent, while similar fluid from cancer of the liver showed no trace of the salts In pernicious anemia there is no increase in bile salts

SAMUEL KARP, M D

Cameron G. Two Pancreatic Functional Tests. *Med J A stralia* 9 3, 4, 7, 8

Cameron examined a series of 16 patients to determine the value of the adrenalin eye test of Loewe and the estimation of the diastase content of the urine as tests of pancreatic activity Whenever possible, the results were checked at operation or postmortem examination The adrenalin eye test was conducted as follows

Both eyes were first examined with regard to the pupillary reactions and abnormalities Ten minims of 1:1000 solution of adrenalin were then instilled into the conjunctival sac of the right eye and five minutes later similar dose was given to the same eye The size of the pupil was then recorded at periods of thirty minutes, sixty minutes, and two hours Dilatation of the pupil during this observation period constitutes positive reaction

The test was found positive in the vast majority of cases of actual pancreatic lesions Eighty per cent of patients with biliary tract disease and probably associated disease of the pancreas reacted positively A positive reaction was noted also in 64 per cent of patients with arteriosclerosis The conclusion is drawn, therefore, that the adrenalin eye test is not specific test of the function of the pancreas Other investigators have previously arrived at the same conclusion

The test for diastase in the urine was found to be a very useful and accurate method for the diagnosis of pancreatic disturbance Lesions of the pancreas, with the exception of malignant disease and certain trophic conditions were associated with an increase in the urinary diastase In diabetes mellitus the value was either normal or subnormal

Microscopic examination of the feces revealed the presence of striated muscle fibers, fat globules, and fatty acid crystals in every case of pancreatic disease

JOHN W. NURON, M D

Zoeppfel, H.: Acute Oedema of the Pancreas, Preliminary Stage of Acute Pancreatic Necrosis (Das akute Pankroedem, eine Vorstufe der akuten Pankronekrose) *Deutsche Zeitsch f Chir* 922, clxxxv, 92

In four of eleven cases the author observed a pathologic picture, each beyond doubt, was that of acute pancreatic necrosis, but did not exhibit the chief sign of that condition, namely necrosis of the glandular tissue In each of these cases there was glassy edema which entirely permeated and surrounded the pancreas Tissues exposed for microscopic examination showed inflammatory edema without injury of the parenchyma There was no hemorrhage or corresponding hemorrhagic exudate in the abdominal cavity In every instance the etiological relationship of gall stone obstruction of the common duct was clear In 10, typical necrosis of the fatty tissue, as also present

The development of the acute necrosis of the pancreas might have been caused by obstruction of the bile and its overflow into the pancreatic system in association with mechanical, chemical, or infectious injury Fully developed pancreatic necrosis causes phenomena suggesting those, while in acute pancreatic edema, pain on pressure and muscular tension are present in the region of the gall bladder and are particularly severe also on some in the middle and the left side of the upper abdomen From chemical and anatomical pathological standpoint, the edema of the pancreas is only preliminary stage of necrosis

The author attributes the results in his cases entirely to his practice of operating only in cholecistomies All four patients were operated upon within the first twenty-four hours and were cured

THOMAS (2)

Vollmann, J. The Surgical Anatomy of the Splenic System of the Spleen (Zur chirurgischen Anatomie der Milzgefässe) *Zentralbl f Chir* 19 2, 1496

This article is based on forty autopsies and operations The splenic artery, which varies in length, was found to divide as follows: (1) behind or in the tail of the pancreas (40 per cent of the cases) (2) between the pancreas and the hilus of the spleen (30 per cent of the cases) or (3) at the hilus (30 per cent of the cases)

After injection of the vessels roentgenograms made in two planes perpendicular to each other revealed the blood flow between the arterial regions and thereby indicated the best incision for resection of the spleen, the implantation of thyroid substance, etc. The best incision is that which extending along the course of the vessels curves down deeply A surgical incision will cut across larger vessels coming from the hilus

DEWEY (2)

Roberts, E. C. Traumatic Rupture of the Normal Spleen. *Misericordia Med* 923 VI, 365

The spleen is perhaps the most friable of all the abdominal viscera. Its rather superficial and somewhat fixed position under the ribs, its tendency to both physiological and pathological engorgement, and its fragile texture and thin capsule are factors favoring rupture when it is traumatized. Rupture occurs much more frequently in males than in females because of the greater exposure of the former to hazards. One half of the cases are those of children and young adults.

The predominating symptoms are those of internal hemorrhage. Shock, with its accompanying symptoms of subnormal temperature, rapid thready pulse, pallor, cold perspiration, clammy skin, and falling blood pressure is usually the first manifestation. Pain is the first and chief complaint and air hunger the second. The cause of death is usually hemorrhage. Without surgical treatment, the mortality is 95 per cent.

Splenectomy first performed successfully in 1893 by Rugeley has steadily gained favor and is now universally recognized by most authorities as the standard treatment. MORRIS H. KANE, M.D.

Ward, G. Chronic Septic Splenomegaly. *Lancet*, 93 CI, 439

A typical case of chronic septic splenomegaly shows (1) chronic septic focus (2) massive splenomegaly (3) leucocytosis in the early stages and an anemia with leucopenia later (4) recovery following eradication of the septic focus. Less constant features are (5) fever (6) hemorrhages (7) enlargement of the liver lymph glands and the lymphoid tissues generally and (8) curiiosis of the affected tissues. The condition is essentially a generalized reaction of the lymphadenoid tissues, the enlargement of the spleen being the most noticeable and characteristic feature.

The improvement that follows the removal of septic foci and the use of vaccines is the fact that the disease can be transmitted to dogs, and the frequent association of splenomegaly with endocarditis strongly suggest that septic organisms play a part in the biology. These organisms must have selective affinity for the lymphadenoid tissues. The spleen, liver and glands are involved, and blood deterioration indicates invasion of the bone marrow. The spleen may become enormously enlarged but subsequently contract because of fibrosis.

Death may occur from hemorrhage. A diagnosis is made by eliminating leukemia, hemolytic anemia, malaria, kala-azar, "Guthrie's" disease and other disorders associated with splenic enlargement. The finding of septic focus, tenderness over the spleen, and the blood picture of early leucocytosis with later anemia and leucopenia are of diagnostic importance.

The treatment requires the eradication of the sepsis, particular attention being paid to the intestinal tract.

In the author's opinion many cases of Banti's disease and idiopathic splenic anemia will fall in the group of chronic septic splenomegaly. He would also include in this group splenomegaly with endocarditis, Egyptian splenomegaly, enteritis and splenomegaly oral sepsis and splenomegaly and certain cases of senile anemia.

In conclusion the statement is made that in all chronic splenomegalies of septic origin the underlying pathologic process is the same.

VICTOR G. BURDEN, M.D.

Chaney, W. C. Splenic Anemia: A Clinical and Pathological Study of Sixty Nine Cases. *Am J Med Sc* 93 CIV, 856

This report is the result of a study of the pathological findings and clinical records of sixty-nine cases of splenic anemia subjected to splenectomy at the Mayo Clinic in the period from November 14, 1905, to September 1, 1910. Cases with distinct hepatic cirrhosis in addition are also considered.

The article is summarized as follows:

A composite picture of the pathological findings in the spleen in splenic anemia was found to be one of generalized fibrosis. While there were no findings in the splenic tissue that would enable the pathologist to make a positive diagnosis of splenic anemia, the abnormality was as characteristic of this disease as in other diseases producing splenomegaly.

The degree of fibrosis of the reticulum seemed to vary in slight degree with the amount of arteriosclerosis, but there was no evidence to show that this fibrosis originated in or around the vessel walls.

3. The size of the malpighian corpuscles seemed to be affected by the degree of fibrosis, and the greater the fibrosis the more eccentric was the so-called central artery.

4. The splenic veins presented no marked abnormality or evidence of thrombophlebitis.

5. Dilatation of the sinuses was fairly constant and the reticular cells showed a proliferative activity. The splenic sinuses resembled those of splenic anemia in this respect.

6. The amount of lymphoid tissue present was usually below normal. The malpighian corpuscles were fairly well defined, but the so-called germinal centers were small and seldom seen. Areas of degeneration or fibrous nodules were not observed in the malpighian bodies.

7. By actual measurement it was found that the size of the malpighian corpuscles was within the normal limits, but the average size was below the average for the normal. The number of corpuscles for each square centimeter was found to be twenty-three.

8. Seventy per cent of the spleens showed that the number of malpighian bodies for each square area decreased and the size of the corpuscles became smaller as the size and the weight of the spleen increased.

9. The average weight of the spleens was found to be 105 gm.

10 The average of the patient with splenic anemia is 35 years and the number of males is about equal to the number of females. There was apparently no familial tendency.

11 The most common complaints are a mass in the left abdomen, gastric hemorrhage and weakness.

12 While abdominal pain was present as the chief complaint, the histories brought out the fact that thirty-two of the patients had attack of vomiting at some stage of the disease. In instances the pain was profuse due to peristalsis.

13 In the physical examination spleen designated just palpable weighed from 250 to 500 gm. while spleens of approximately 1,000 gm. extended to the midline and almost to the level of the umbilicus.

14 The relation of the size of the spleen given in the clinical records to the actual weight of the fact that many adhesions were found at operation suggested that the spleen of splenic anemia mainly retains its normal position in the abdomen.

15 Physical examination showed twenty-four enlarged livers, while at the operating table twenty-six showed a definite cirrhosis and thirteen were larger than normal. The size of the liver seemed to have no relation to the size and weight of the spleen.

16 In the majority of cases the average erythrocyte count was 4,700,000, the hemoglobin 55 per cent, and the leucocyte count, 4,950. The

coagulation time and the fragility test were normal, and the Wassermann tests and the stool examinations were negative.

17 A composite chart of the blood counts made after the operations showed a gradual increase in the leucocytes up to the forty-fifth day. There was then gradual decrease until the normal was reached in about seventy-five days. A similar result was shown by composite chart in which the number of leucocytes found by counts made before the operation was taken into consideration.

18 A comparison of the number of lymphocytes in the differential count showed that the average was thus the limit of the normal. Lymphocytosis did not seem to be a characteristic in this series.

19 In the study of the liver tissue in splenic anemia thirty of the cases showed definite cirrhosis. The liver entirely normal in none.

20 The chief complaints of the thirty patients who had hepatic cirrhosis were the same as those of the rest of the series. Hemorrhage and abdominal mass were the predominating complaints.

21 Twenty-four of the patients with cirrhosis of the liver had ascites.

22 Total three and three tenths per cent of the patients with cirrhosis died within forty days of the operation, while within the same length of time the death rate among the remaining patients was only 2.8 per cent.

GYNECOLOGY

UTERUS

Lochrane, G. D. An Endometrial Adenoma of the Abdominal Wall Following Ventrixiostomy of the Uterus. *J Obst & Gynec Brit Emp* 93 xxx, 3

In Lochrane case tumor mass developed at the site of an incision which was made for ventral suspension of the uterus four years previously. This mass varied in size with relation to menstruation becoming larger during the periods. At second operation the mass was found to be an endometrial adenoma in the abdominal wall due evidently to the implantation of endometrial tissue during the first operation. The cells were probably carried by the sutures.

HARR W. FINE, M.D.

Letteri, F. S. Inguinal Hernia of the Uterus (*Uterus inguinale dell'utero*). *Arch ital di chir* 923, vii 39

The author reports a case of his own, reviews seventy-eight of the eighty-five cases reported in the literature, and discusses the classification, pathology, anatomy and embryology of this uncommon condition.

Letteri believes that in inguinal hernia of the uterus there is always a defect of conformation. For the uterus to become a portion of the contents of an indirect inguinal hernia, close relationship between a defect in the normal evolution of the canal and abnormal development of the genito-inguinal ligament is essential.

Inguinal hernia of the uterus may be total or partial. The gravid uterus and the uterus masculinus may be involved. In the literature the author has been able to find the reports of only twenty-five cases of total hernia. Of twenty-four in which the site was mentioned, thirteen stated that the hernia was on the left side and eleven that it was on the right. In seventeen cases the hernia was irreducible. Complete reduction was possible in only one. In fifteen case reports an anomaly of the uterus or vagina was mentioned.

Sixteen cases of partial herniation of the uterus are collected. Of eleven reports in which the site of the hernia was mentioned, seven stated that it was on the left side and four that it was on the right. In thirteen cases there was malformation of the uterus such as uterus bicornis or uterus bipartitus.

In ten cases in which the uterus was gravid the herniation was on the right side in five and on the left side in five. In one case of bicornate uterus, pregnancy was present in the right herniated cornus.

There are twenty cases of hernia of the uterus masculinus. Of twenty-two reports in which the site

of the herniation was mentioned twelve stated that it was on the left side and ten that it was on the right.

The principal symptoms are pain and an increase in the size of the hernial tumefaction during the menstrual period, lengthening of the vagina with gradual narrowing and deviation to the affected side and the transmission of the hernial sac of movement is impressed in the vagina. In partial uterine hernia, there is movement of the cervix. Pathognomonic symptoms of this condition when the uterus is gravid are rapid increase in the size of the hernial sac, placental souffle, fetal movements, and fetal heart sounds.

The treatment is surgical reduction, if possible, or total extirpation of the uterus.

SAL ATORRE DE PALMA, M.D.

Truesdale, F. E. Uterine Fibromyomata. *Baslow M & S J* 93 cxxxix 97

The author presents a compilation of the end-results of 300 cases treated by operation and discusses the association of malignancy, sterility and hemorrhage with fibromyomata. In the cases reviewed there were four operative deaths, a mortality of 4 per cent. Two hundred and twenty-two of the women were married and seventy-eight were single. Twenty-five myomectomies were performed. Six of the patients were between 20 and 30 years of age, eighty-two between 30 and 40, 165 between 40 and 50, thirty-six between 50 and 60, nine between 60 and 70, and two over 70.

Malignancy was found in nine of the 300 cases. In six (6 per cent) the malignant changes were found in the uterus. In two others there was associated ovarian cancer and in one a cancer of the breast.

In an investigation relative to the present condition of the patients information was received concerning 200. Eighty-six per cent of these reported themselves in good condition. Sixteen complained of some pelvic disturbance, mainly of bladder origin and associated with intestinal and minor nervous symptoms.

Fourteen had died since leaving the hospital, six of these from malignancy. The remaining deaths had no apparent connection with the pre-operative condition or the operative procedure. In five cases the cause of death was the extension of the process found at operation or a recurrence. Four of the nine women with malignancy are living and well. The postoperative lapse of time however is not noted.

The author believes that in spite of the present diligent search for early malignant changes, fibromyomata are too often overlooked and are not given

About month later fever without chills re-appeared with morning remissions and evening exacerbations. No pulmonary phenomena were observed.

Four months later when the author took charge of the case, the patient appeared to be suffering from a chronic infection with hectic fever. Examination revealed a slightly subn obliterated uterus which was movable and painless. The right adnexa were negative. In the left adnexa a tumefaction about the size of a large fresh fig was found attached to the broad ligament posteriorly and above. The mass was slightly tender and fixed. A diagnosis of lymphangitis of the broad ligament was made but the possibility that the mass was a suppurating dermoid was suggested. Three months later this mass enlarged rather quickly, filled the left iliac fossa, and became softer. A few days later it doubled in volume, dysuria began, and the urine became turbid.

Operation performed about thirteen months after delivery revealed mass the left broad ligament. This proved to be the left ovary which was enormously enlarged and adherent to the outer end of the tube, the sigmoid, and the bladder. Between the bladder and the mass an opening was found.

The patient made a slow recovery. Macroscopic and microscopic examination showed the ovary to be tuberculous. The parenchyma was affected more than the rest of the gland.

In the author's opinion the process developed originally in the parenchyma and the pregnancy and puerperium accelerated it.

SAL ATORI DE PALMA, M.D.

Delannoy E. Embryonata and Mixed Tumors of the Fallopian Tubes (Contribution à l'étude des embryonates et des tumeurs mixtes des trompes utérines) *Gynec et obst* 9 3, vii, 30.

Delannoy reports a case of bilateral tumors of the fallopian tubes, one dermoid cyst and the other a mixed tumor. The former weighed 275 gm and the latter 470 gm.

In 1913, the patient a woman 3 years old, was seized with violent abdominal pain particularly in the left lower quadrant. Constipation as present. A tumor as felt by the patient in the left lower quadrant. After the first attack she was well until 97. She then had five more attacks before 97. These were characterized by vomiting, abdominal distention, constipation, dysuria, and fever of from 38 to 38.5 degrees C.

In September 921 posterior colpotomy was performed as diagnosis of pelvic peritonitis had been made on account of the fever and the presence of a very tender mass in the cul de sac. As no fluid was found but, instead, a solid mass, a laparotomy was performed.

Ten cases from the literature are analyzed, one of them the author believes is doubtful. There seem to be no diagnostic symptoms except those of solid or cystic tumor of the ovary. Malignant change in these tumors has never been observed.

SAL ATORI DE PALMA, M.D.

Gullermin, A., and Morlot, R. A Primary Epithelioma of the Fallopian Tube (Epithéliome primitif de la trompe de fallope) *Gynec et obst* 9 3, vii, 376.

The authors report the case of a diabetic woman, 54 years of age, who was subjected to salpingectomy and total hysterectomy because of an epithelioma of the right tube. The appearance of ascites seven months later indicated recurrence.

One hundred and sixteen cases of primary epithelioma of the fallopian tube have been reported in the literature. The diagnosis of this condition is difficult as other diseases very often cause the same symptoms viz intermittent abdominal pain, forced leucorrhoea, and occasional uterine bleeding.

SAL ATORI DE PALMA, M.D.

EXTERNAL GENITALIA

Shaw W F. Carcinoma of the Female Urethra, with Notes of Two Cases Treated with Radium. *J Obst & Gynec Brit Emp* 923 xxx, 5.

Carcinoma of the urethra is a rare condition, only about 100 cases having been reported prior to the present time. It usually occurs in women over 40 years of age. As a rule the symptoms are urination (the vulva and painful micturition). The growth begins in the urethral mucous membrane or the epithelium surrounding the meatus and invades the urethra secondarily. The inguinal glands are involved in only one third of the cases.

The treatment may be operative removal or radiation. The majority of cases so far reported have been treated by surgery. One of the two operations usually performed for this condition is the resection of the entire urethra and part of the base of the bladder. A permanent opening into the bladder either suprapubic or vaginal, is made. This treatment gives the best chance for recovery. The other surgical method is partial removal of the urethra with preservation of the internal sphincter. This is not followed by incontinence but is associated with greater risk of recurrence. The only non-surgical method is the application of radium. In the author's cases, which were treated in this manner, there was no local recurrence after three years but in the lymph node with metastatic cells as removed from the inguinal region.

HARRY W. FREE, M.D.

De Gironcoli, F. An Anatomical and Clinical Contribution to the Study of Benign Tumors of the Female External Genitalia (Contributo anatomico clinico allo studio dei tumori dei genitali esterni della donna) *Arch ital di chir* 9 3, ii, 77.

The author reports two cases of benign tumors of the labia majora—one a fibroma, the other a lipoma—with illustrations showing the gross and the microscopic pathology. The cases reported in the literature he summarizes in table. The following deductions are drawn from his study.

Benign tumors of the vulva are of connective tissue origin. The most common are fibromata. Less common are the lipomata with gradations from fibrolipomata to lipofibromata. Myofibromata are very rare. These tumors seldom undergo sarcomatous change. They vary in size from that of cherry to that of an adult's head. The larger tumors almost all have pedicles of the same composition.

3. Important etiological factors are () a predisposition of the connective tissue of the parts affected, sometimes hereditary and () trauma.

3. The tumors are usually derived from the subepidermal connective tissue. In rare cases they are derived from the round ligament.

4. The two forms are difficult to differentiate histologic examination is essential.

5. The prognosis is generally good. A rare complication is pyemia following ulceration of the tumor. Still more rare is sarcomatous degeneration.

6. The only efficacious treatment is vaginal extirpation of the tumor.

SALVATORE DE PALMA, M.D.

MISCELLANEOUS

Glow, S. The Effects of Physical Exercise on Menstruation. *Lancet*, 9 3, 1911 4

This article is of interest from a statistical standpoint as the author questioned 318 girls between 1 and 5 years of age.

Before advice was given, 70 per cent. stated that they were free from menstrual troubles. At a second interview after advice was given this figure was raised to 93 per cent.

It was found also that physical exercise, and even bathing, lessened the tendency to menstrual trouble. Before exercise was advised about 5 per cent. of the girls questioned were compelled to lie down because of a severe spasmodic type of menstrual trouble. This figure was reduced to 5 per cent. by exercise and their measures. In conclusion the author states that exercise may be the future treatment of both menorrhagia and dysmenorrhea.

WALTER A. STRANDBERG, M.D.

Roody, A. J. Primary Sterility. *Am. J. Obst. & Gynec.* 9 4, 1913

During the twelve months preceding September 9, 1913, 101 women consulted the author for the treatment

of primary sterility. The majority had had some operative interference. The operations varied, including dilatation, cutting operations on the cervix, and operations to correct uterine displacements or to repair diseased fallopian tubes. In every case some combination of organic extracts is given as supplement to the operative measure. The results of all of these methods of treatment are equally unfavorable. Only twelve of the patients became pregnant and the probabilities are that the rest will remain sterile unless new treatment considerably more effective than those now employed is discovered.

The average age of the patients in this series was 33 years. The average period of marriage was six and one half years; the longest was seventeen years, and the shortest nine months. Twenty per cent. of the patients suffered from irregular menstruation, the intervals ranging from two to nine months. One patient who began to menstruate at 6 years of age and menstruated very irregularly, stopped menstruating at the age of 35 years, and another who began at 4 years, stopped at the age of 13 years. One patient stopped menstruating as soon as she was married, at the age of 24 years. She consulted the author three years later.

Fourteen per cent. of the patients suffered from dysmenorrhea. Many were compelled to remain in bed during the menstrual flow. Four per cent. suffered from scanty menstruation. One patient had menorrhagia. Eighty-six were examined for patency of the fallopian tubes. In fifty-eight (68.8 per cent.) the fallopian tubes were found to be open, while in twenty-seven (33 per cent.) they were apparently closed.

The author now uses transuterine insufflation during abdominal operations as by this means he is able to establish the patency of the tubes with the least amount of trauma to the mucous membranes. He employs it also in examining patients subjected to plastic operations on the fallopian tubes. He finds that it may be employed very readily during the period of convalescence from the operation. The passage of the gas under pressure through the tubes may prevent the formation of adhesions around the distal openings.

The percentage of cases of sterility which are amenable to treatment is very small.

EDWARD L. CORNELL, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Herbitz, F. "The Pathologic Anatomy of Auto-intoxications" in *Pregnancy and Childbirth*. Surg Gynec & Obst 9 3, xxxvi, 767

This article is based on material collected in the course of years from many postmortem examinations of patients from the gynecological clinic at Rik's hospital and classified from the anatomical point of view into the following seven groups: Group 1 puerperal eclampsia; Group 2 eclampsia without characteristic anatomical changes; Group 3 intoxications without convulsions but with the anatomical changes of eclampsia; Group 4, auto-intoxications in pregnancy and childbirth that appeared clinically as renal disease and anatomically as renal degeneration; Group 5, auto-intoxications in pregnancy and childbirth, in which degeneration of the liver predominated; Group 6 hyperemesis gravidarum; and Group 7 auto-intoxications in pregnancy and childbirth with nervous symptoms predominating.

The most important anatomical changes in these conditions were degenerations in the liver and kidneys.

The cases of excessive vomiting of pregnancy were of special interest: both the liver and the kidneys were involved, and in a few cases there was acute yellow atrophy.

The anatomical picture in the different groups was to a certain degree similar and the resemblance of these cases to cases of phosphorus, arsenic and mushroom poisoning was of interest.

The syndromes and lesions were probably not due to bacteria as there were no signs of infection. The fact that hyperemesis occurred in the early months indicated that purely mechanical pressure of the uterus was not responsible. The uræmia of nephritis was ruled out by the fact that the kidneys showed only a degeneration. The marked degeneration of the liver and kidneys proved that reflex irritation or hysteria was not the etiological factor. Changes in the organs of internal secretion were probably the result rather than the cause of the symptoms. There is no doubt that the hypertrophy of the mammary glands and the growth of the corpora lutea are due to the fetus and the placenta. With regard to the suggestion that faulty metabolism may result in acidosis the author states that in this case also the fundamental cause may be some form of intoxication. The fact that eclampsia may develop in cases of hydatid mole in which the fetus has been completely absorbed, and the fact that eclampsia the fetus may show changes similar to those in the mother suggest that the fetus itself is not the source of the intoxication.

The conclusion drawn from these considerations is that the symptoms and lesions of eclampsia and the other disturbances under discussion are best explained as due to intoxications originating in the placenta, the exact nature and mode of action of which we do not yet understand.

WILLIAM B CAMPBELL, M D

Brood, W B and White P D. "Heart Disease in Pregnancy." *Boston M & S J* 9 3, clxxxviii, 984. Hamilton, B. E. "Notes on the Problem of Heart Disease in Pregnancy." *Boston M & S J* 9 3, clxxxviii, 987.

These two papers are based upon a total of 10 cases observed through pregnancy delivery and the puerperium and systematically followed up.

It was found that about 50 per cent of pregnant women who present cardiac symptoms or signs do not have organic heart disease. Heart disease in pregnancy is almost invariably rheumatic in type.

The prognosis must be based upon the functional capacity rather than structural change. In rheumatic heart disease there is a risk of maternal death, prolonged disability before and after delivery, permanent disability, loss of the child, and tendency to rheumatic heart disease in the child.

WALTER L. STRANBERG, M D

Campbell, D G. "Pregnancy and Heart Disease." *Canada M Ass J* 9 3, xlii, 244.

This is a report on 39 cases of pregnancy complicated by heart conditions which constituted 1 per cent of all cases admitted to the Montreal Maternity Hospital from 1905 to 1911. They are classified as follows:

Mitral stenosis sixty seven cases. There were twenty six normal labors and four maternal deaths. One of the deaths occurred before, and three occurred after delivery. Five of the other women are known to have died of heart failure within a year after confinement. The danger increases materially with subsequent pregnancies.

Mitral regurgitation, twenty cases. There were sixteen normal deliveries. Only one patient showed signs of collapse.

Aortic regurgitation with or without mitral regurgitation, ten cases. There were eight normal deliveries and only two cases of cardiac embarrassment. Subsequent pregnancies showed no proportionate increase in the cardiac disturbance.

Aortic regurgitation and mitral stenosis, seven cases. There was one normal delivery. All of the patients suffered permanent cardiac damage from the pregnancy.

Auricular fibrillation, ten cases. There were three normal deliveries and two maternal deaths.

All of the patients sustained grave cardiac damage from the pregnancy. The hysteresis showed the fibrillation to be the result of valvular lesions.

6 Myocarditis, twenty-eight cases. There were fourteen spontaneous labors. Seven of the women died at about the time of delivery and others are known to have succumbed to heart failure subsequently. All of the patients showed defective response to effort but endocarditis and pericarditis could be excluded as causes.

7 Aortic stenosis, five cases. Three of the patients progressed well. Two had vocated myocarditis, and one of them died one month after delivery.

8 Congenital lesions with the appearance of pulmonary stenosis, two cases. Both of these patients had a normal, easy labor.

The author concludes with these generalizations: Atricular fibrillation, myocarditis, and mitral stenosis are diversely affected by pregnancy. When a woman with any one of these conditions becomes pregnant, abortion and sterilization should be done without waiting for signs of breakdown.

Women with mitral stenosis without myocarditis or previous heart failure are capable of bearing one or two children with safety, but each pregnancy injures the heart materially.

If close attention is paid to the symptoms and signs of heart failure, breakdown in cases of mitral stenosis can be forestalled by the induction of labor or cesarean section. When decompensation is present, the former is more satisfactory.

Mitral and aortic regurgitation, aortic stenosis, and congenital lesions are not so seriously affected by pregnancy. The endurance of the heart muscle is of chief importance. CARRERA D H WONG, M.D.

Jones, J. B. Abdominal Pregnancy. *Lancet* 11/11/14 931, 47.

If the majority of cases of abdominal pregnancy there is a definite history of rupture in the early months.

The diagnosis may be extremely difficult or even easy depending upon the stage of development. Pregnancy of this type will produce the same general picture as a normal pregnancy, but peculiar menstrial history, the location of the growth in an empty uterus, general pelvic discomfort, and an early uterine souffle will aid in the diagnosis. The main point in the early stages is not to misinterpret the signs of rupture.

According to Beck, statistics, the best time to operate is in the interest of the child, the thirty-eighth week. The operative danger arises mainly in the handling of the placenta. Beck has proved by experiment that the peritoneum can readily deal with three fifths of the placenta. He has collected a series of twelve cases in which the child was removed, the cord cut close to the placenta, the placenta with its membranes left in situ, and the abdomen closed without drainage. When it appears that the placenta can be removed safely, this should be done.

The author reports a case in which the left broad ligament, as found spreading over the tumor and the placenta occupied the upper portion of the sac, extended down on the left to the level of the overlapping broad ligament, and received its blood supply from the mesosigmoid and the left broad ligament. The child was extracted and the cord clamped and cut close to the placenta. Complete evacuation was done and the abdomen closed without drainage. Unsuccessful recovery followed.

WILLIAM B. CAMPBELL, M.D.

Leenormant, C., and Hartman, Keppel, G. A Further Contribution to the Clinical Aspects and the Treatment of the Complications of Tubal Pregnancy. (Nonella contribution à l'étude clinique et thérapeutique des accidents de la grossesse tubaire.) *Gynec. et obst.* 93, 1914, 73.

The authors briefly review forty-eight recent cases of tubal pregnancy and discuss the principal anatomical types encountered, the treatment employed, and the results obtained.

Of forty-five of the case reports which treat the site of the pregnancy, twenty-six state that it was on the right side and sixteen that it was on the left. In three cases there was a rupture or a tubal abortion on one side and hematosalpinx on the other. In twenty-two cases the pregnancy, as of the ampullary artery in ten, uterine in ten, and interstitial in two.

In twenty-one of thirty-three cases a tubal rupture occurred and in nine tubal abortion in one case there was a questionable ovarian pregnancy. There were eight cases of hematosalpinx, ten of four.

The symptoms of intraperitoneal hemorrhage in with intraperitoneal hemorrhage without diagnostic symptoms, four with partially encysted intraperitoneal hemorrhage and thirteen with encysted intraperitoneal hemorrhage.

In the eight cases of bimanual palpation two abdominal hysterectomies, the conservation of normal adnexa and three unilateral salpingo-oophorectomies were performed. In the twenty-four cases with symptoms of intraperitoneal hemorrhage, seven unilateral salpingo-oophorectomies and two bilateral salpingo-oophorectomies were done. Abdominal hysterectomy was done in four cases, in two on account of interstitial pregnancy, one on account of fibromyoma of the uterus and in one on account of an associated salpingitis on the opposite side. No drainage was used. In the four cases with partially encysted intraperitoneal hemorrhage, three abdominal hysterectomies and one unilateral salpingo-oophorectomy were performed. In eleven uninfected cases with encysted intraperitoneal hemorrhage, six unilateral salpingo-oophorectomies, one bilateral salpingo-oophorectomy, four hysterectomies, and one posterior hysterectomy and salpingectomy by the bimanual route were done. In uninfected cases one as subjected to abdominal hysterectomy with vaginal drainage and the other to posterior hysterectomy with bimanual packing.

No mention is made of microscopy for absolute verification of the diagnosis. A recognizable embryo or fetus as found in only eight cases.

In the total number of cases reported by the authors (eighty-four) the mortality was 7 per cent. SAL TORRE DE PALMA, M.D.

LABOR AND ITS COMPLICATIONS

Levant and Portes. Hemorrhages in the Nervous Centers in Eclampsia (Hémorragies des centres nerveux en cours de l'éclampsie postpartale). *Gynec. et Obst.* 9 3 VII 33.

At the Baudelocque clinic eclampsia occurred in 183 of 55,488 obstetrical cases. There were five deaths from cerebral hemorrhage, a mortality of .7 per cent. The authors' study is based on forty-one cases of hemorrhage in eclampsia which have been reported in the literature and five unpublished cases. Each they report brief with the autopsy findings. The hemorrhage occurred in the meninges in twenty cases. In ten it was cerebro meningeal in eleven, purely cerebral, in three, peduncular in one, bulbopontal and in one diffuse.

Death may occur suddenly with marked cyanosis accompanied by hemiplegia or persistence of coma with thermal disturbances. If the patient survives the attack, which is rarely the case, sequelae such as hemiplegia with or without fever may persist. Definite and complete hemiplegia means cerebral hemorrhage and incomplete or transitory hemiplegia a meningeal condition. The pathology of the hemorrhages is obscure. In certain cases syphilitic endarteritis seems to play an important rôle. No distinct or proved case of medullary hemorrhage associated with eclampsia has been reported.

SAL TORRE DE PALMA, M.D.

Grosz, A. Syncope and Shock in Labor (De l'état syncopal et de l'état de choc chez les accouchées). *Rev. franç. d'obst. et d'obst.* 9 3, XVII 309.

Obstetrical shock is discussed on the basis of eleven cases; the author practice in which delivery occurred without any serious genital injury or profuse hemorrhage and there was no history of pathological lesions in the lungs, heart, liver or kidneys. Syncope and shock are closely related in these cases and no attempt is made to differentiate them.

Seven of the eleven cases discussed were those of primiparae. Of the four multiparae three had had from seven to thirteen pregnancies. In four cases labor as long and tedious forceps were employed eight times. In five cases chloroform was used and in three cases the placenta was delivered ritually. None of the infants weighed less than 4 kilos; four weighed between 3½ and 4 kilos, and five weighed 4 kilos or more.

Predisposing causes are nervous temperament, previous conditions such as convalescence from an acute infectious disease, anemia, and mental and

physical depression in the weeks previous to delivery, a difficult and long labor in action of the sac, a difficult instrumental extraction, prolonged vesicæ, and precipitate delivery with forced dilatation of the cervix.

As a rule this complication has been noted shortly after the delivery of the placenta, but it may occur at any time during the labor or two or three hours afterward. The symptoms are of two types: the syncopal and the cardiac. In some cases the condition begins with a chill. This is ascribed to a placental origin or to the absorption of toxic products.

On the basis of the pathology the author distinguishes three types of postpartum shock: (1) nervous shock due to an inhibitory uterine reflex from sudden dilatation of the cervix and uterine tumours, (2) toxic shock due to the absorption of toxic cellular and bacterial material, and (3) complex shock due to several causes such as circulatory cardiac or hepatic conditions.

The treatment and prognosis depend on whether the shock is due to a uterine hemorrhage, a rupture of the uterus, or cardiac collapse. As a rule the prognosis is good. The treatment is generally the usual measures employed to combat shock. In the eleven cases reported there was one death.

SAL TORRE DE PALMA, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Phillips, J. The Puerperium. *Practitioner* 19 3, CV, 409.

It is generally assumed that the puerperium lasts for four weeks, but the patient should not consider herself normal for three months after confinement.

Many obstetricians order a douche after the introduction of the hand but except for an occasional douche of hot water to promote contraction of the uterus after the third stage douching is unnecessary in the normal case. Cases of often severe discharge with fever washing out with a double channel cannula is of very great importance.

Before the patient is allowed to get up a pelvic examination should be made to ascertain the size and position of the uterus. To restore the normal position postural treatment and, when necessary, a Hodge pessary are used.

The time honored castor oil on the third day has been displaced by colocynth and hyoscyamus with belladonna and oxymel. After evacuation general diet is given.

The author discusses only complications of unusual character. Among these are phlegmasia alba dolens, bacterial infection, thrombosis, which is considered non-septic and is especially common and troublesome in the hemorrhoidal veins, embolism from thrombosis in the right side of the heart and thence into the lung, nerve disturbances, such as lack of mental balance, acute mania, melancholia, and hysteria and severe after pains which bear on the management of the third stage, complete laceration of the perineum, hematoma of the vulva.

fibroids ovarian tumors retroversion soreness of the nipples and disorders of micturition. Among the rare complications in the author's cases were stone in the kidney, gall-stones, appendicitis, epidemic influenza, scarlet fever, measles, chicken pox, and typhoid.

Complete laceration of the perineum should be repaired at once. Hematoma of the vulva sometimes requires excision. Fibroids generally cause no symptoms but may degenerate or become strangulated. Ovarian tumors are usually removed during pregnancy. Soreness of the nipples during lactation is best relieved by the use of a lead nipple shield. An abscess requires early and free incision. Disorders of micturition are chiefly retention due to the trauma of prolonged labor.

The author formulates three main conclusions:

1. Streptococcus infection is preventable.
2. More attention should be paid to infection by bacillus coli.
3. The puerperium is almost pathological and continues so for at least four weeks.

WILLIAM B. CAMPBELL, M.D.

Fraenkel, E. Gas-Bacillus Infection of the Uterus (*Ueber Gasbrand der Gebärmutter*). *Arch f. path. Anat.* 93, 1931, 33.

Physometra—which is not to be confused with tympanic uterus—is caused by the Fraenkel gas bacillus. Seven cases are reported in detail with a discussion of the manner in which the gas bacillus infection in the smooth muscle of the uterus separates the individual muscle elements and causes thrombosis in the vessels.

The infection attacks only the gravid or postperal uterus, almost always follows criminal abortion, and runs an unusually rapid course leading to death in a short time. Crepitation of the uterus can be elicited by palpation through the abdominal wall. The gas infiltration does not always affect the entire organ, as frequently it is localized. It is particularly prone to affect retained portions of the placenta. It may not involve the parametrium at all or may cause thrombosis while its chief site is in the muscular tissue, therefore it is of as great importance as the putrefactive and necrotic processes going on in the striated muscle. In animals, an additional exciting cause is the symptomatic anthrax bacillus of Kitt.

The article is concluded with certain clinical observations. In the nearly always fatal gangrene of the uterus caused by the gas bacillus there is a poisoning of the organism due to the absorption of toxic material from the tissue broken down by the gas bacillus, and usually, in addition, bacteremia. The anaerobic gas bacillus does not itself produce toxins but has destructive action upon the blood which is manifested clinically by discoloration of the skin suggesting mixture of ketosis and cyanosis. The urine may contain the same product of blood destruction as the serum.

Removal of the diseased uterus does not greatly improve the prognosis, but Bracht was able to save

life by this operation in one case. Fraenkel strongly recommends the administration of Fraenkel serum. *Diagn. (2)*

Eng, E. A Study in Puerperal Morbidity. *Surg. Gynec. & Obst.* 9, 2, 1914, 797.

The author's study is based upon 7,000 case records covering a period of approximately fifteen years. Histories without a careful description of the delivery and a record of the puerperal temperature were excluded. Of the 3,500 house cases, approximately 1,700 were those of primiparae and 1,800 those of multiparae. Of the out practice cases, 700 were those of primiparae and 2,300 those of multiparae. The results of this study are summarized as follows:

1. The total morbidity was 8.6 per cent in the house cases and 2 per cent in the out practice cases.

2. Morbidity was nearly twice as common in primiparae as in multiparae.

3. The total morbidity percentage has shown steady decrease by five-year periods both in house and out practice cases.

4. The total mortality from puerperal sepsis was 0 deaths in 10,000 cases.

5. The morbidity in non-operative cases was 5.5 per cent in cases delivered in the house and 1.6 per cent in out-practice cases.

6. There was a definite increase in the morbidity in the non-operative cases of primiparae as compared with those of multiparae, and the influence of long labor and repeated vaginal examinations can be traced.

7. There was either bacteriological or definite clinical evidence of gonorrhea as an etiological factor of the puerperal infection in 36 per cent of the primiparae and 20 per cent of the multiparae.

8. In a large number of the patients, varying from 33 to practically 75 per cent of the total number, the course of the reaction was very mild and no definite etiological factor could be found.

9. The morbidity percentage has shown steady drop by five-year periods in non-operative cases, in both house and out practice cases.

10. The mortality rate was in 1936 house cases and none in the out practice, non-operative cases.

The percentage morbidity in cases subjected to operative procedures was 9 per cent in the house cases and 8 per cent in the out practice cases.

11. The incidence of postoperative morbidity was from two to four times as great in primiparae as in multiparae.

12. The drop in the incidence of postoperative morbidity has been less than that of the non-operative morbidity.

13. In their relation to morbidity the operative procedures show the following sequence: intra-uterine douche, cesarean section, extraction with craniotomy, manual removal of the placenta, following some other procedure, the insertion of bag followed by some other procedure, cesarean section, version and extraction, high forceps, mid forceps, breech.

extraction low forceps, manual removal of the placenta the insertion of a bag. In the out practice cases the sequence was practically the same.

15 The operative procedures which have been followed by death have been the more serious prolonged type. Multiple procedures have been common. C. H. D. vs. M. D.

PUERPERIUM AND ITS COMPLICATIONS

Phaneuf, L. E. An Obstetrical Case Presenting an Unusual Group of Complications. *Boston M G J* 9 3 december 94

Phaneuf's case was that of a woman 3 years of age who had been married nine years and had had two children and one miscarriage. The first child as born year after marriage. Delivery was effected by medium forceps extraction after twenty four hours of labor. The second delivery also was difficult and terminated by the use of medium forceps after seventeen hours of labor. The perineum was badly lacerated and poorly repaired. Subsequently there was a first degree prolapse. Two years after the second delivery the prolapse was corrected by abdominal suspension. Following this, the patient had a miscarriage and was curetted. Just as she was recovering from the effects of the hemorrhage she became pregnant for the fourth time.

The early part of this pregnancy was uneventful but toward the seventh month she developed frontal sinusitis, tracheitis, and swelling of the

ankles. The following month, January 1922 albumin and casts appeared in the urine. A few days later the output of urine diminished, the edema became more pronounced, and marked tenderness developed in the left groin. Examination on February 7 revealed fixation of the uterus to the anterior abdominal wall and extreme thinning of the posterior uterine wall. A large child presented by the left shoulder in right position. The cervix had been pulled up to the promontory of the sacrum and the child's abdomen was resting against it. The hemoglobin was 30 per cent and the red count 325,000. There was thrombosis of the saphenous and iliac veins with edema of the extremities. The patient had also a nasopharyngitis, tracheitis, and bronchitis with cough. The urine at this time showed albumin, casts, and blood.

The distention of the uterus made pelvic delivery impossible; the anemia rendered abdominal delivery dangerous; and the respiratory infection contra-indicated general anesthesia. To overcome these difficulties it was decided to give a transfusion and to do a cervical cesarean section under spinal anesthesia. Four hundred cubic centimeters of whole blood were transfused. When the abdomen was opened it was found that the entire lower uterine segment was walled off by adhesions. The child, a male weighing 9 lbs. 14 oz., was delivered through incision in the cervix. The patient completely recovered after a stormy convalescence.

HARRY W. FINE, M.D.

GENITO-URINARY SURGERY

ADRENAL, KIDNEY AND URETER

- Jaff, H. L., and Martine D.: The Influence of the Suprarenal Cortex on the Gonads of Rabbits. I. The Effects of Suprarenal Injury (by Removal or Freezing) on the Interstitial Cells of the Ovary. *J. Exper. Med.* 93: 33, 1928.
- Jaff, H. L., and Martine D.: The Influence of the Suprarenal Cortex on the Gonads of Rabbits. II. The Effects of Suprarenal Injury (by Removal or Freezing) on the Tubules and Interstitial Cells (Leydig) of the Testis. *J. Exper. Med.* 93: 33, 1928.

It is well known that hypertrophic changes occur in the interstitial cells of the ovary and the suprarenal cortex in certain animals during pregnancy. Removal of the gonads also causes hypertrophy of the suprarenal cortex. In the authors' experiments moderate or marked ovarian enlargement was observed in 76 per cent of rabbits which survived double suprarenalectomy for more than thirty days. Hypertrophy of the interstitial cells is additional evidence regarding the functional interrelation between the suprarenal cortex and the interstitial cells.

Double or partial suprarenalectomy in rabbit produced no specific changes in either the tubules or the interstitial cells of the testes. This fact indicates that the interstitial cells of the testes and the ovary are not functionally homologous.

THOMAS J. DORR, M.D.

- Balfanz, H. A.: A Cyst of the Right Suprarenal Capsule Removed by Operation. *Ann. N.Y. Acad. Med.* 923: 4, 1926.

During the examination of the abdominal content preceding gastrojejunostomy for an old peptic ulcer of the first part of the duodenum, a large cystic tumor of the right hypochondrium was found. This was attached only slightly to the kidney. The kidney was displaced downward, and the liver to the left and downward. The removal of the cyst was not deemed advisable following the gastrojejunostomy. The patient made satisfactory recovery.

Three months later there were definite indications of tumor in the right side extending down from under the right costal margin.

With the patient on the left side an incision was made below the 11th rib. A cyst measuring approximately 6 by 9 in. was exposed. This was tapped and then peeled from its firm attachment to the peritoneum and its base in the neighborhood of the vertebral column. It was only slightly attached to the kidney. Temporary drainage was established.

The cyst contained pus of thin, amber colored, odorless, turbid fluid which was neutral in

reaction and became solid when it was boiled. The thickness of the walls of the cyst ranged from 1/4 in. to that of writing paper. The outer surface of the cyst was smooth except for adhesions and irregularly distributed yellow nodules varying in size from 1/4 to 1/2 in. The inner surface of the cyst was rough and yellowish pink, and in certain areas was covered with a white sebaceous material. The fluid showed weakly the presence of adenoma. Section through the yellow nodules revealed adrenal cortical cells.

The method of origin of the cyst is uncertain. Hemorrhages into cysts are frequent and account for the reddish brown contents usually found. Cysts of the suprarenal occur in the lower animals.

The symptoms may be only a sense of fullness in the side or light dyspeptic symptoms without pain, but if hemorrhage takes place pain may be severe and the patient may become seriously ill.

The diagnosis is difficult until the tumor can be palpated. Then, mobility from side to side is greater than that from bow down. A cyst on the right side pushes the kidney down and the liver to the left and down. A cyst on the left side displaces the spleen and the tail of the pancreas to the right. A right lobe hydatid cyst can be difficult to differentiate until it suppurates. A hydatid cyst of the spleen is more mobile and pancreatic cysts are usually more centrally placed.

Complete removal of the cyst is indicated. This is most easily done through lumbar incision below the 11th rib. The opening may be enlarged, if necessary by extending the incision or resecting the 11th rib, and drainage is easily established.

Doran, in 1908, gave references to cases recorded in the literature up to that date, and this article adds the cases reported since then.

WILFRED R. WALTZ, M.D.

- Cabrer, R. G.: Suprarenal Tumors—Suprarenomas (Lun suprarenomas). *Germania Med.* 93: 107, 1927.

Attention is first called to the suprarenal origin of certain kidney tumors by Graevenig in 1913. Cabrer discovers the suprarenoma through study of the classification of such tumors has pursued and reaches the conclusion that the pathogenesis described by Graevenig is correct. Tumors denoted from the suprarenal tumor has characteristics which arrange their classification in distinct groups viz., suprarenomas.

A large number of tumors reported in the literature as tumors of renal origin are suprarenomas. These include the neoplasms called epitheliomas, clear cells adenomas, clear cells, and the majority of endotheliomas. W. A. BARRETT.

Guyot, J. and Jeanneney G. A Physiopathologic Study of Kidney with a Double Ureter (Etude physiopathologique d'un rein à uretère double) *J. Chir. Méd. et Chir.* 9 3, XV 8

Embryologically the kidney is formed from two pouches, one of mesoderm which forms the parenchyma and caeca and the other of endoderm which forms the urinary excretory system. The second pouch comes from the allantois near the Wolffian body penetrates into the embryo kidney and divides to form the pelvis, calyces, and tubules. If this division occurs too early Y-shaped ureter results. If it occurs before the origin of the pouch double ureter is formed. As the caeca of the kidney are arranged according to the excretory canals and are terminal, each excreting lobe of an abnormal kidney or a kidney with supplementary ureters is independent of its neighbor.

Hence in double kidney only certain part may be diseased and conservative surgery such as partial nephrectomy may be sufficient. A case of this kind is reported in detail. Attention is called to the functional differences in the parts of such kidney. When the ureters are of the Y type two ureteral openings may not be shown in the bladder.

KILLGOO SPEED, M.D.

Ostley W. C. Hydronephrosis. *J. Urol.* 923 2, 45

Hydronephrosis associated with an anomalous artery crossing the ureteropelvic junction is not very infrequent and shows a definite symptomatology.

The renal artery may be partially doubled (early branching) or entirely doubled throughout (a course, or the vascular supply may enter the kidney or the hilus at either one or both poles, with or without a vessel to the normal hilus. With polarascular supply the artery supplying the lower renal pole is frequently found close to the ureteropelvic junction running anteriorly or posteriorly to the pelvis or in the presence of two caeca, entering the lower pole on each side of the renal pelvis. These anomalous vessels may spring from the aorta or from the spermatic ovarian, or ilia arteries.

Aside from infection, the outstanding feature is the dilatation of the renal pelvis, which varies in capacity from 500 cc. to liter. The pelvic wall undergoes hypertrophy. The ureteropelvic junction shows neither stricture nor valve formation, and the ureteral opening is nearly normal position. At the ureteropelvic junction these structures are intimate relation to the aberrant caecal, and there may be one or two associated aberrant caeca, the whole making definite band-like structure. The artery may be very small or carry at least half of the total blood supply. The plexus of vasomotor nerves is not associated with the anomalous caecal to the lower pole unless there is no caecal ring the hilus, when it is seen along the course of both upper and lower polar arteries. The renal parenchyma is thinned in proportion to the extent of the hydronephrotic process and shows bosses over the dilated

calyces within. The tubules are thinned and flattened corresponding to reduction of the renal function. The unaffected part of the ureter is normal.

The pain localized in the kidney region occurs in attacks varying in frequency and increasing in severity. It does not radiate much except to the height of an attack, when it may be referred along the course of the ureter. In acute attacks nausea and vomiting are common. The acute attack comes on rather suddenly, reaches its maximum within a few hours and then subsides, leaving a heavy aching sensation which persists for several days. During the intervals there may be a heavy dragging feeling and certain movements and positions of the body are painful.

With the great pelvic distention there may be a palpable tumor during the acute attacks, which subsides with the pain. As a rule however neither kidney is palpable. During the attacks complaint is made of localized pain and tenderness. Urination may be normal or during the attacks there may be frequency. The combined renal function is usually quite normal, and analysis reveals only very slight trace of albumin and few blood cells. A normal temperature and leucocyte count are characteristic, but slight transient pyrexia may occur. The general condition is usually excellent. Cystoscopic examination reveals nothing abnormal. In one kidney there is a definite interference with function. The hydronephrotic side shows a continuous rather than an intermittent flow of urine and pyelography reveals distention of the pelvis and calyces.

The treatment is surgical and of three types: (1) nephrectomy, which is reserved for kidney with loss of function; (2) ligation and section of the aberrant caecal which is justified only when the enlargement is slight and the other vessels are adequate; and (3) plastic operations on the dilated pelvis to the ureteropelvic junction. The ideal operation on a well-functioning kidney is elimination of the intimate relation between the aberrant artery and the excretory passages, as by free section of the ureter followed by its reimplantation into the most advantageous portion of the pelvis away from the caecal.

LOUIS NEWBLE, M.D.

Majoun, J. A. H., Jr. and MacCarty W. C. Malignant Neoplasia of the Kidney Occurring in Infancy. *Surg. Gynec. & Obst.* 93 XXXI, 78

There is much confusion concerning the histogenesis of the mixed tumors of the kidney found in children. The study reported in this article was made on seven renal tumors removed from seven children, the eldest of whom was 7 years of age and the youngest 20 months. The tumors are found to be composed of one type of cell in various stages of differentiation and with varying amounts of connective tissue reaction. The authors classified them as carcinomata of the adenomatous type.

Such tumors are of varying degrees of malignancy. They have both undifferentiated and partially

differentiated tissues of apparently the same type of cell, and whenever there are undifferentiated cells the prognosis is unfavorable.

Three of the seven children died within a year after the operation; one died but not till one year later; one is perfectly well eighteen months after the operation; and one cannot be traced.

Delore, X. and Dupret, C. A Perinephritic Abscess Appearing First on the Left and, After an Interval of a Year on the Right Side (Phlegmon périphrénique apparaît d'abord à gauche et à droite à un an d'intervalle). *J. d'ur. méd. et chir.* 1913, 27, 93.

Perinephritic abscess following general infection or staphylococcus bacillæmia is usually unilateral. In fifty cases reported in 1912 there was no case of bilateral localization. In the few known instances of bilateral involvement both kidneys are affected almost simultaneously or the second is involved only a few days after the first. In the case reported in this article the interval between the involvement of the two sides is more than a year and both attacks followed a staphylococcus infection. The patient is a woman 54 years old who in November 1910 had a furuncle on the left temple and on the dorsal surface of the left middle finger. In April, 1911 while apparently in good health, she suddenly experienced pain in the left lumbar region. There was no fever or any other disturbance. In July 1911 she entered the hospital because of swelling in the lumbar region. At operation, July 5, a large quantity of pus was evacuated. The kidneys appeared intact. The patient was discharged from the hospital July 25.

On August 8, 1912 she returned with similar symptoms on the right side. Incision emptied about a liter of pus. Cultures showed pure staphylococcus aureus. The patient stated that about 1 month before the second perinephritic abscess she had had two furuncles on her neck for about two weeks.

KILLGORE SEIZEN, M.D.

Gianfanti, A. Double Ureter, Tuberculous Kidney Nephrectomy (Uretra double avec tuberculose, néphrectomie). *J. d'ur. méd. et chir.* 1912, 27, 97.

The patient, a 58-year-old woman, had all the cardinal signs and symptoms of renal tuberculosis. On cystoscopic examination two ureteral openings were found on the left side. The urine from one contained a large quantity of pus, while that from the other was clear. Total nephrectomy was performed.

The kidney was found to be divided into two parts, one of which was surrounded by perinephritic thickening and adhesions. After removal the mass had the appearance of two kidneys united by an isthmus. The tuberculous was limited to the lower portion. There were two ureters and two pelvises. The operator regretted that he did not limit the operation to partial nephrectomy.

KILLGORE SEIZEN, M.D.

BLADDER, URETHRA, AND PENIS

Oliva, C. Bladder Hernia in Infancy (L'hermie de la vésica nell'infanzia). *Arch. ital. di chir.* 1912, 17, 333.

In the literature, Oliva has been able to find only sixteen cases of bladder hernia in young children. These he reviews briefly. In this article he reports a case of his own and one unpublished case seen by Mangiagano. All of the sixteen patients are under 12 years of age.

The following conclusions are drawn:

1. Bladder hernia in children is very rare. Its frequency is 0.46 per cent while that of cystocele is 1.25 per cent.

2. It is most common in the inguinal region (86 per cent of the cases) and next most common in the femoral region (11 per cent of the cases). It occurs more frequently in males (94.5 per cent) than in females, and on the right side (89 per cent) than on the left.

3. It may be paraperitoneal or less commonly extraperitoneal. A case in which it was intraperitoneal has been observed.

4. It may result from (1) congenital factors, such as weakness or thinning of the hernial ring or abnormality in the form or position of the bladder or (2) acquired factors, such as inflammatory processes, adhesions between the bladder and hernial sac, or prevenculipoma, which cause fixation and traction.

5. The symptoms are very vague.

6. The diagnosis of cystocele in young children has never been made before operation.

7. The operative findings which should suggest the condition are (1) prevenculipoma (2) a grayish-red color of the suspected body which on palpation gives the sensation of two surfaces sliding upon each other (3) the direction of the pedicle toward the median line and toward the pubis (4) the presence in cases of diverticulum, of collar or an isthmus at the hernial ring (5) the possibility of palpating in the midst of the organ the point of catheter introduced through the urethra, or an increase in volume of the body on the introduction of fluid into the bladder and (6) the occurrence of muscular contractions.

8. The complications of cystocele in infancy are strangulation and calculus.

9. The prognosis is good.

The treatment is resection of the hernial sac, if any exists, and of the prevenculipoma, followed by reduction of the herniated bladder. A true ventral diverticulum must be extirpated.

If in the course of radical treatment of hernia in child, a thickening of the sac or lipoma is found, a hernia of the bladder should be considered.

The author's case and that of Mangiagano are the only cases of femoral hernia of the bladder in young children so far reported. All others were cases of inguinal hernia. The author's case is the only reported case of bladder hernia in a female.

W. A. BRIDGES

Joly, J. S.: The Operative Treatment of Vesical Diverticula. *Proc Roy Soc Med Lond* 1913, xiv, Sect Urol 55.

Excision of the sac is the only rational treatment of vesical diverticulum. No single operation is suitable for all cases.

Excision from without the bladder may be transperitoneal or extraperitoneal and is best suited for diverticula situated high up on the lateral walls and those occurring at the urachus.

Putting of the bladder all down to the orifice of the diverticulum is indicated when the diverticulum is situated low down on the posterior wall of the bladder when the walls of the bladder or diverticulum are thick and inelastic, and when there is marked pericystitis.

Intra-cistal operations are dangerous.

Invagination of the sac should be performed partly from within and partly from without the bladder. Combined invagination and inversion of the sac is a definite advance on the usual invagination method.

If prostatic or urethral obstruction is a complicating feature, both conditions should be treated at the same time. If this is not feasible the diverticulum should be removed first and the obstruction treated later. A preliminary cystotomy usually does more harm than good.

The presence of a calculus in the bladder or the sac is an indication for excision of the diverticulum.

Usually the ureter lies in close relationship with the neck of the sac and must be guarded against injury during the operation.

The contents of a diverticulum cannot always be evacuated by catheterization. The urine left behind after catheterization called concealed residual is often considerable in amount. The presence of concealed residual urine vitiates all renal functional tests carried out on the bladder urine. Therefore it is necessary to catheterize the ureter or to estimate the blood urea.

The presence of a diverticulum is best diagnosed by cystoscopic examination, and the size and position of the diverticulum are best determined by means of cystograms.

LOUIS KROEMER, M.D.

Czechoslovak, E. F.: Syphilis of the Urinary Bladder (*Syphilis der Harnblase*). *Casop Lek* 1913, lxv, 855, 856, 903.

In 600 cases the author examined cystoscopically he found fourteen cases of syphilis of the bladder. To these he adds nine cases of a series of 15 examined cystoscopically in the Czech dermatological clinic in Prague. In all of the twenty-three cases the Wassermann reaction was positive and each syphilis treatment gave quick results.

The signs of syphilis revealed by the cystoscope included hyperemia of the bladder cystitis, papules, ulcers, spherical tumors (gummata) and similar lesions. In nine cases the mucosa had most peculiar appearance, being sprinkled with milky and larger nodules of the same color as their surroundings. This picture resembled that of shagreen.

Another form of syphilis of the bladder not previously described was the formation of a moss-like mulberry-shaped overgrowth of the mucosa resembling that noted in bilharziasis of the bladder (two cases). Tertiary formations (gummata) were seen in five cases and ulcers in seven. In two cases the ulcers had caused the formation of bladder fistulae, one of which led into the intestine. In one case a pulsating tumor was found, apparently an aneurysm of a calic artery due to syphilis.

Of 600 cases examined cystoscopically since 1911, all showed considerable trabecular hypertrophy and a distinct reaction to anti-syphilis treatment. In thirteen there were parasymphilitic changes in the bladder and in seven the vesical tonus was increased. None showed a positive Wassermann reaction and three a positive Beilost reaction. In five there was a history suggesting syphilis. The thirteen cases of parasymphilitic conditions included two cases of tabes incipiens, five of tabes dorsalis, one of pseudotabes, and five of progressive paralysis. The trabecular hypertrophy in these cases cannot be ascribed to purely mechanical factors as it was associated chiefly with specific trophoneurotic disturbances.

KROEMER (2).

Rochet and Thévenot: A Case of Total Cystectomy in a Woman with Carcinoma of the Bladder (*U cas de cystectomie totale chez une femme atteinte de cancer de la vessie*). *J. d'urrol. méd. et chir.* 1913, xv, 1.

The patient, a 58-year-old woman, was operated upon in 1911 for a tumor of the hepatic fissure of the colon. The growth proved to be an epithelioma. No intestinal disturbance followed the operation. Two years ago frequency of urination began and in six months was followed by hematuria. Beginning in April, 1913, the urinary frequency and hematuria with casts became very troublesome. Examination of the kidneys was negative. The cystoscope revealed a normal right ureteral orifice, the left orifice was masked by vegetations. An operation was refused, radiotherapy was given for eight hours. Subsequently pieces of tumor tissue were voided, but there was no relief from frequency, hematuria, or pyuria. A cystoscopic examination in July showed the tumor spreading in the fundus of the bladder.

On November 14 the bladder was exposed and liberated without doing hysterectomy. The ureters were severed a fingerbreadth from the neck of the bladder and the peritoneal bladder covering firmly pushed on the front of the uterus. The left ureter was implanted in the abdominal wound and drained by a ureteral catheter. The right ureter, which was lost in the neoplastic mass, could not be freed and was left at the bottom of the wound. The wound was drained. At the present time only a small fistulous opening remains and from this the urine drains into a receptacle. The case is remarkable as the patient had had a carcinoma in two different areas in the course of twelve years.

In the operation performed by the authors for total removal of the bladder the anterior and posterior surfaces of the bladder are dissected free by opening the peritoneum. The two pedicles of the lateral ligaments, which are left are cut between forceps, the urethra is cut off about 1 cm from the bladder neck and the two ureters are sectioned so that the base of the bladder can be stripped out. Its resection may be done at the same time. The ureters may be transplanted into the bowel, but there is less danger of infection when they are implanted in the operative wound.

KILLACK BERT, M D

GENITAL ORGANS

Kornitzer F and Zenger C. *Nyomatous and Adenomyomatous Hypertrophy of the Prostate* (über myomatöse und adenomyomatöse Prostat hypertrophie) *Zucker und Chir* 9 3 31 35

The authors have found the literature dealing in precise information regarding the topographical histogenesis, and pathogenesis of the purely or predominantly fibromyomatous form of hypertrophy of the prostate although very exhaustive work has been done on the adenomyomatous form, particularly by Tandler and Zuckerkandl. Therefore they here present in some detail a number of the cases of fibromyomatous prostatic hypertrophy affecting the middle lobe which were observed on Zuckerkandl's service. Clinically these cases presented severe symptoms of and need prostatic hypertrophy with complete or incomplete retention of urine but on rectal examination the gland was found to be only slightly enlarged though hard, nodular. Superficial enucleation as very difficult in every instance in some areas it could be done only with the knife and usually not in toto.

Examination of serial sections in cases revealed preponderance of smooth muscle and connective tissue over the glandular portions both were arranged in strands and broader bands and frequently also in circumscribed nodules. The connective tissue was often similar to that in a richly cellular fibroma being young, rich in nuclei, and with large, clear spindle cells and large light nuclei. The glandular substance was divided into larger and smaller lobes by wide septa which consisted almost exclusively of smooth muscle and showed transitional epithelium, viz large, darkly staining finely granular cells with large, dark nuclei and disintegrating epithelium in many forms.

Corpora amylacea or their preliminary stages, granular and flakey concretions, were found deposited in greatly dilated gland ducts lined with quite flat epithelium or free in the smooth musculature. Elastic fibers were found more closely deposited in the lower parts of the submucosa. The circumscribed fibromuscular nodules contained no elastic tissue. Collections of lymphocytes and signs of localized inflammation were numerous and sometimes in the form of small abscesses. The larger

bands of smooth muscle showed no signs of inflammation therefore they could not be attributed to inflammatory processes. Under certain circumstances, however, these might explain the origin of new connective tissue cells.

As regards the grounds of this form of prostatic hypertrophy the authors agree with Virchow and Klebs that it begins as the glandular form and becomes gradually associated with an increase in the stroma. PYLAUER (2)

Stevens, A. R. *The Differentiation Between Tuberculous and Non-Tuberculous Inflammation of the Epididymis.* *J. Urol.* 21 2, 25

The author discusses only cases of epididymitis in which the diagnosis was confirmed by microscopic examination after operation. In a series of 113 such cases the condition was tuberculous in seventy four, simple inflammation in thirty-five and syphilis in four.

All of the patients with tuberculous or simple inflammation of the epididymis complained of swelling or pain. Seven of the former and four of the latter had urinary symptoms. In 25 per cent of those with tuberculous and 22 per cent of those with simple inflammation the condition was bilateral. Over 25 per cent of the former had had previous operation, but none of the latter had been operated upon before. Thirty-eight per cent of the tuberculous and 6 per cent of the non-tuberculous had a discharging sinus. The patient age was apparently of little importance. A history of trauma as given in 1 per cent of both groups of cases. Nonspecific infection was not an apparent factor. Tuberculous elsewhere as found in thirty-one cases in the tuberculous group and in only one case of simple inflammation.

The duration of symptoms was less than two weeks in 20 per cent of the cases of tuberculous and 37 per cent of the cases of simple inflammation. Less than one month in 25 per cent of the former and 43 per cent of the latter and between one and three months in 20 per cent of the former and 22 per cent of the latter. Beyond three months, the percentages were nearly identical.

For one month the involvement of the prostate and seminal vesicles was about the same in both groups but after that time the tuberculous group showed more marked extension while the simple type improved. The involvement of the vas was about the same in both groups and not of much aid in the diagnosis. A beaded vas was found in seven tuberculous and three non-tuberculous patients.

The four patients with syphilis gave histories of priapism, increasing enlargement of the testicles of from five to twelve months' duration. Rectal examination was negative. Three had positive Wassermann reaction.

The following points are brought out in the conclusions.

1. Double epididymitis slightly favors tuberculous.

2. A previous operation almost invariably means tuberculosis.

3. A tumor persisting longer than a month is probably tuberculous.

4. In over 90 per cent of cases tuberculous elsewhere means genital tuberculous.

5. When the condition has been present longer than a month, rectal examination is of some aid in the diagnosis. After six months the condition of the prostate and vesicles is of great importance in the diagnosis, for the longer the duration of the condition the greater is their involvement.

6. A simple inflammatory lesion may last as long as a tuberculous lesion. C. D. PICKENS, M.D.

Sonderlund, G. The Surgical Treatment of Tuberculosis of the Epididymis (Beitrag zur Frage ueber die chirurgische Behandlung der Nebenhoden-Tuberkulose) *Die Chirurg. Monat.* 9:3 IV 513.

The point of origin of the tuberculous process is of great importance with regard to the method of operation. When the patient is first examined the testicle, vas deferens, seminal vesicles, and prostate are usually affected and which of these was first involved is difficult to determine.

Some surgeons believe the infection spreads upward from the epididymis and therefore to remove the testicle with the epididymis. Others contend that it originates in the prostate and spreads downward, and therefore remove also the prostate, seminal vesicles, and vas. This extreme method, however, has never gained ground because simple castration gives satisfactory results. In the author's opinion the epididymis is the primary site of the disease and the removal of the prostate and vesicles unnecessary.

Two schools of operation have developed, the radical, which was sponsored in Germany and followed in Sweden, and the conservative (simple epididymectomy) which has been followed in America and France. Even the conservative operator, however, removes the testicle when at operation it is found diseased on macroscopic examination. From the clinical aspects of tuberculous of the epididymis it appears that epididymectomy is indicated rather than castration, since the disease seems to be confined to the epididymis. The Germans castrate on the assumption that the testicle is always found involved on microscopic examination, but experience has shown that if it is only microscopically affected, it recovers after the removal of the epididymis as does the bladder after nephrectomy. Recently German surgeons seem to incline more and more toward the American-French method of simple epididymectomy. Castration means mutilation even though in many cases of bilateral castration the libido, sexual power, vigor and vitality remain unchanged. The author tabulates the castrations and epididymectomies performed in his hospital in two tables and gives the case histories.

In the General and Sahlgren Hospitals in Gothenburg, Sweden, fifty-two cases of tuberculous epididymitis were operated upon in the period from 1914

to 1920. There were thirty-seven castrations, twenty-four epididymectomies, and nine combined operations. The first three years after the operation are the critical ones, and for practical purposes a cure at the end of this term may be regarded as permanent.

Following the twenty-four epididymectomies on twenty-three patients there was only one recurrence, but there is no reason to believe that the method of operation, castration or epididymectomy, causes any difference one way or the other in the number of recurrences or the mortality rate. There were three deaths, all of which occurred within three years. The immediate mortality of these operations is practically nil and the risk of leaving the testicle is extremely slight. In most cases it is later found healed, a fact suggesting that it is especially resistant to tuberculous. After castration healing is perhaps

little smoother and fistulae occur slightly less frequently, but the length of the hospital stay is alike and if castration is avoided the internal secretion of the testicle is conserved to make up for these small drawbacks.

The author summarizes his conclusions as follows:

1. A large number of cases of tuberculous epididymitis simple epididymectomy gives fully as good results as castration. The mortality, recurrence, and length of hospital stay are equal. Consequently epididymectomy should be preferred because it saves the testicle.

2. In old men castration is indicated because the loss of the testicle is of minor importance. In young men the testicle should be spared if on palpation during operation it is found to be of normal size and consistency, but castration should be done if the surrounding soft parts are tuberculous and fistulous and the testicle on the other side is normal.

3. The patient's wishes should also be taken into consideration. He may prefer a radical operation with the loss of one testicle and short hospital stay to removal of the epididymis alone and longer hospitalization.

4. In double tuberculous epididymitis in which one side is severely affected and the other only slightly involved the former should be operated upon radically and on the better side the epididymis should be removed. If both sides are severely affected and the testicles appear sound, bilateral epididymectomy should be done and the testicles spared.

5. When one testicle has been removed in a previous operation for tuberculous epididymitis the other should be spared if possible, either entirely or in part. If there is doubt as to whether a radical or conservative operation should be done the patient's general health should decide. Castration should be done if there are signs of tuberculous in other parts of the body.

6. Fistulae or abscesses alone are no indication for castration provided the node found in the epididymis is circumscribed and the rest of the epididymis appears normal or the entire epididymis is enlarged and covers the testicle like a lumpy cap. In such

cases a quick cure with conservation of the normal testicle can be expected. Epididymectomy does not appear to cause atrophy of the testicle.

As a rule tuberculous epididymitis can be easily differentiated from acute epididymitis, leuc, and tumor but its differentiation from chronic, non-specific epididymitis is difficult. Especially staphylococci, descending from the bladder along the urethra, cause chronic epididymitis that should be excluded before operation by a careful bacteriological examination of the urine. Of sixty-five cases of chronic epididymitis operated upon as tuberculous, fifty-two were found to be tuberculous, six non-tuberculous, and seven doubtful.

Uncomplicated epididymitis the technique of operation is easy but if surrounding induration and abscesses are present it is difficult to remove the diseased tissue without impairing the blood supply of the testicle.

The skin incision is placed either in the scrotum or the inguinal region, the latter in the author's cases. The external aponeurosis is split as far as necessary. To assure prompt healing after epididymectomy it is very important to stop all bleeding carefully and close the wound without drainage.

A. C. MILLER, M.D.

MISCELLANEOUS

ROSEMAN, E. C., and MEISNER, J. G. The Production of Urinary Calculi by the Devitalization and Infection of Teeth in Dogs with Streptococci from Cases of Nephrolithiasis. *Arch Int Med* 93: 331, 1917.

Infection is regarded as a common cause of calcification in tissues, but the hypothesis that certain micro-organisms which infect man may have peculiar power in this respect is not generally believed.

During the preparation of immune sera, in which repeated injections of dead streptococci having different localizing powers were made, concretions were found. Necropsy in the calves and substance of the kidneys of sheep infected with pyelonephritis strain. In series of experiments in which nephritis followed the devitalization and infection of teeth in dogs with staphylococcus from case of nephritis one dog developed pyelitis and cystitis with marked calcareous deposits in the adherent exudate in the pelvis of the kidney and in the bladder. On the basis of these observations it was believed worth while to attempt to produce urinary calculi in dogs by creating foci of infection around the teeth with organisms isolated from the urine and foci of infection of persons with nephrolithiasis, thus simulating the conditions so often present in clinical cases.

The dogs selected were active and well nourished. They were kept under hygienic conditions and fed a balanced ration of dog biscuit supplemented occasionally by meat. A supply of water rich in lime salts was constantly before them. At the beginning of the experiment catheterized specimens of the

urine were normal and roentgenograms of the kidneys, ureters, and bladder were negative. Cultures from the catheterized urine of the patients and from foci of infection in tonsils and teeth were made on blood agar and in glucose brain broth. The teeth of the dogs were infected either with the primary culture obtained directly from the focus of infection or the urine of the patient, or with the culture from renal lesions in rabbits which had been infected intravenously with the primary culture. From ten to four cusps were devitalized and infected. Catheterized specimens of urine were examined at intervals. At the end of from fifty-one to one hundred and twenty days after the infection of the teeth one kidney was removed from each dog, thus affording the opportunity at necropsy some time later to compare the findings in that kidney with those of the opposite kidney.

Nine cases of nephrolithiasis were studied. The ages of the patients ranged from 35 to 60 years. The details of only one of the nine cases are given. This patient had had repeated attacks of renal colic for four years, and in this case four series of experiments were performed on dogs. The dogs in three series were inoculated with cultures isolated from the patient's urine and those in one series with cultures from an infected tooth.

In the first series, the teeth of ten dogs were devitalized and infected with the primary culture from the urine. Both dogs developed calculi.

In the second series, the teeth of four dogs were infected with the primary culture from the urine and the teeth of four others with arthritis strain. Four other dogs were placed under the same conditions without devitalization or infection of the teeth. Calculi were found in the kidneys of three of the four dogs whose teeth were infected with the culture from the urine. The fourth dog died of distemper eleven days after infection of the teeth, too soon for stones to form. The kidney in the eight control dogs remained normal.

In the third series, ten dogs were used. The teeth of four of these were infected with the primary culture of the streptococcus from the urine of the patient during a quiescent interval and six dogs whose teeth were devitalized but not infected with a nephrolithiasis strain were used as controls.

The kidneys of three of the dogs in the first group contained small calculi, the fourth dog in this group and the six control dogs were free from calculi and other lesions.

In the fourth series the teeth of ten dogs were inoculated with the streptococcus from one of the patient's teeth, and the teeth of ten control dogs with the streptococcus from the tonsils of patient with acute uric acid myeloma. The first ten developed calculi in the kidneys, the control dogs were free from calculi and other lesions.

Calculi or lesions of the kidney were produced in 80 per cent of the dogs whose teeth were infected with streptococci from the urine infected teeth, and tonsils of nine patients with typical nephro-

inhibits. The duration of the experiments yielding positive results was from one to ten months. The duration of the experiments on the dogs in which the findings were negative was too short for stones to form. This is in sharp contrast to the findings in an equal number of dogs whose teeth were infected with strains from other sources and in those of a larger series kept under the same conditions but whose teeth were not infected.

Painstaking search was made for the organism in the lesions in the kidneys and in, or adjacent to areas in which sections revealed beginning stone formation.

The experimentally produced calculi were similar in physical properties and chemical composition to those found in nephroblastoma in man. The number and size of the stones were often proportional to the duration of the experiment. Roentgenograms often revealed the larger stones. The other findings in the urinary tract were also similar to those occurring in patients with this disease.

The streptococcus inoculated into the teeth of the dogs was isolated from the kidneys, from some of the stones, and from the teeth at the end of the experiment, and its elective affinity for the urinary tract in rabbits was demonstrated in intravenous injection.

Roodolfs, E. The Idiopathic Urine Reaction of Wildbolz (Ueber die Eigenharnreaktion nach Wildbolz). *Ztschr. f. anal. Ch.* 9, 2, 77.

Wildbolz demonstrates the tuberculous toxins in serum or the secretions of the body by means of an allergy reaction in intracutaneous tests. Unfortunately there are certain sources of error bound up with this reaction which can be avoided only by the most careful technique experienced hands. Attention must be paid particularly to the condition of the kidney function, as in advanced renal tuberculosis the idiopathic urine reaction becomes negative because of the impairment of the secretory power of the diseased kidney.

Whether the idiopathic urine reaction will reveal differences of intensity in the disease has not been demonstrated with certainty at the present time. It is of no use as an indication of the prognosis. The antigen content of the urine is not appreciably raised by the presence of excreta.

The author classifies the specific urine reactions into four groups:

1. The reaction is pronounced, active tuberculosis (except far advanced tuberculosis of the kidney).
2. A positive reaction as an accidental finding in other diseases and in normal persons. Frequently the idiopathic urine reaction is of great value in the differential diagnosis.

3. The positive reaction in non tuberculous and otherwise healthy persons. Such cases are relatively rare.

Roodolfs connects the development of the positive reaction with the fact that at the appearance of the antibodies and antigens, at the beginning of

the struggle between the infection and the body no pathologico-anatomical changes are to be found. It makes a difference whether the problem is regarded as pathologico-anatomical or immunobiological.

It has been found that a number of other diseases may give a positive idiopathic urinary reaction. These group belong tertiary syphilis, typhoid, and paratyphoid. Therefore the reaction is not absolutely specific for tuberculosis and the method must be further tested before its value can be accurately stated. It is a complicated procedure most suitable for large clinics. The specific reaction of the blood is recommended, as in this it is possible to eliminate a number of sources of error. SCHREIBER (Z).

Hartman, G. W. The Diagnosis and Cure of Gonorrhea. *California State J. Med.* 9, 3, 321, 393.

Hartman's criteria of the cure of gonorrhea are as follows:

1. Absence of all urethral discharge.
2. Urines 1, 2, and 3 free from shreds or containing only shreds free from pus cells. At the All American Conference it was concluded that shreds are unimportant if they float for at least two minutes after agitation of the fluid.

3. Frequency of urination normal and nocturia absent.

4. Prostate and seminal vesicles normal to palpation and free from pus cells. Lecithin present in prostatic secretions in normal amounts. In many instances it is virtually impossible to obtain the desired degree of freedom from pus cells in these secretions. Cessation of treatment followed by a normal sexual life for few months will usually clear up the remaining pus cells.

5. Patency of the urethra. As the patient is being prepared for dismissal, sounds should be passed to determine the patency of the urethra and for their therapeutic effect. If this is done gradually it will not be followed by a discharge.

6. Discharge following silver nitrate treatment, if any, negative as regards gonococci, both microscopically and bacteriologically.

7. Normal testicles, epididymes and vasa.

8. Absence of discharge on physical exertion and on the injection of vaccines.

In conclusion Hartman says:

1. The cultivation of the gonococcus can be done as simply as that of any other organism provided the medium is warmed before the inoculation and kept warm until the oxygen tension has been reduced and the tube is transferred to the incubator.

2. The ability to cultivate the gonococcus seems to decrease first after treatment and seldom increases again. The finding of gram-negative intracellular diplococci is the second factor to disappear; the subjective and objective findings persist very much longer, and the patient cannot be considered cured until they have been entirely eliminated.

LOUIS GROSS, M.D.

Lévy Weissenmann. Anorectal Gonorrhoea (La blennorrhagie ano-rectale). *J. d'anal. m'ed. et chir.* 9: 3
21 3

Reference is made to Hebrew and Greek descriptions of this disease in the pre-Christian era. In 733 Hecker gave the first detailed description of it. In 87 Rollet stated that the anal mucosa is less sensitive to the infection than the conjunctiva. In 1874 Bonastre successfully transplanted the infection from the conjunctiva to the anus but failed to implant it in the rectum, a fact he attributed to the difference in the type of epithelial cells in the two areas. In 88 Cosulich and Dubar confirmed this assumption but since then it has been refuted as the organism can now be recognized with the microscope.

The rarity of the disease is only apparent. Especially in the cases of prostitutes, it has been confused with other conditions. It occurs more frequently in the female than the male because in the former the anatomical relationships favor anal contamination and menstruation and pelvic inflammation favor intestinal stasis.

The condition may be caused by direct inoculation, indirect inoculation (finger, sponges, thermometer, etc.) and auto-infection. The relative infrequency of indirect inoculation is due to the relative insusceptibility of the anal region. The cylindrical epithelium of the rectum, like that of the urethra, offers easy passage to the gonococcus and the organism buries itself in the mucosal folds. A normal anal mucosa is good barrier but in the presence of eczema, ulcers, and superficial inflammation which lower its vitality the development of infection is favored.

The appearance of the anus varies according to the severity of the infection. Light cases show only diffuse redness with or without swelling. In cases of medium severity there is greater swelling with desquamation and the radiating folds are covered with yellow or greenish pus. In the severe cases ulceration with fissure formation follows. In acute cases, the rectal walls are loaded red and thickened, in the late stage they are granular.

KELLOGG SERIES, N D

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Polettini, R. Osseous and Cartilaginous Neoplasms Resulting from Grafts of Fixed Tissues (Utheron contribute allo studio di neoplasmosi ossee cartilaginee determinate da innesti di tessuto fisso) *Arch Ital d Kir* 9 3 14, 69

In this article Polettini reports the results of experiments in which he grafted pieces of osseous, powdered bone and cartilage, and cartilage extracts into the ears of rabbits.

In five of the fifteen experiments with grafts of osseous the graft was examined at the end of seventy days, in six at the end of eighty-two days, and in four at the end of one hundred and seventy days. In each instance the graft and the surrounding tissues were studied in serial sections. Histologic examination showed disappearance of the muscular fibrocellular tissue, the infiltration of fibroblasts, and calcification of the elastic fibers. In other cases giant cells were found among the elastic fibers while in still others there was complete or nearly complete resorption of the graft. In five cases, clear evidence of new bone formation was found about the graft.

In the experiments with powdered bone and cartilage and in those with cartilage extracts the results were also negative as regards the proliferation of bone and cartilage.

Polettini concludes that bone and cartilage grafts contain substances capable of exciting the activity of connective tissue. The importance of the articular

Each graft as introduced was proved by the fact that osseous and cartilaginous neoplasms were found when articular cartilage, bone, or fragments of osseous were grafted into the ears of rabbits but not when they were grafted subcutaneously into their backs. W. A. B.

Knaggs, R. L. Osteitis Fibrosa. *Bull J Surg* 9 3 1, 487

Osteitis fibrosa is a disease of bone in which part of the osseous framework and its marrow is replaced by fibrous tissue. This disease may be caused by the extension of joint infection or septic irritation. Arthritic joints sometimes show transparent areas in the bones entering into their formation. Lumps of the bone may be found or cavities filled with gelatinous mucoid substance.

Osteitis fibrosa may occur as a primary affection. The author discusses four types of cases, viz. Type 1, those in which the disease is characterized by uniform masses of fibrous tissue. Type 2, cases with solid fibrous masses which show a tendency to degenerate and form cysts. Type 3, cases in which

much bone is formed and the disease shows signs of coming to an end and Type 4, cases with single cysts of bone.

To illustrate cases of Type 1, Pollard's case is cited. The patient was a child of 5 years who had injured her leg when a year old. The bone swelling was noted and he half a year later. There was no pain. A solid mass of fibrous tissue occupied the middle third of the tibia. Sections showed anastomosing bone trabeculae enclosing spaces filled with a substance resembling the fibrillar matrix of growing bone. At this stage of the disease the sectioned bone shows a solid area of fibrous tissue sharply differentiated from apparently healthy bone.

An example of the second type of case was a case reported by Clogg and investigated by Eve. The patient was a man 4 years of age who had sustained a fracture near the middle of the tibia ten years previously. The tibia was enormously expanded. Its entire upper half was converted into four or five large cysts. The lower half showed more homogeneous appearance with a few cysts. The bone itself as only reticulated shell with a small area of cancellous tissue beneath each articular cartilage capsule as found.

Occasionally in some specimens there are definite masses of new bone but as a rule the production of bone in cases of Types 1 and 2 is not sufficient to be of note.

To illustrate cases of Type 3, three cases are cited. This stage seems to be a later development of the disease found in cases of Types 1 and 2.

In the case of a woman aged 37 years, the tibia became painful after an injury sustained six years previously and amputation was necessary. Its upper half as found to be transformed into minutely cancellous bone like tissue so devoid of lime salts that it was pliable and cut readily with a knife. The compact wall and medulla had been replaced by this tissue.

In a case of Type 4 seen by the author there was a cyst of the humerus. Fibrous connective tissue filled the spaces between the trabeculae and presented numerous small cysts.

The histology of osteitis fibrosa is fairly constant. Bone marrow is replaced by a dense vascular connective tissue which is composed of uniform or branched cells with outrunning processes and may show a whorled arrangement. All fat disappears. The connective tissue replaces the osseous framework. Numerous scattered foci of new bone which are formed throughout the connective tissue framework eventually coalesce and form sclerosed masses of bone. Ossification begins either by metaplasia of small patches of connective tissue or by the deposit of calcareous granules around a connective tissue

cell in a matrix formed by the connective tissue itself. An intermediary stage of fibrocartilage has been observed by Eisma: but is very uncommon.

The origin of the cysts is not clearly traceable in sections. There seems to be tendency toward the development of areas of degeneration in the connective tissue framework. In most cases the cyst contents are a pale yellow serum suggesting hyaline reaction. Small cell infiltration is absent.

The disease usually begins in childhood or during the growing period and if left to itself may persist throughout life. The patient is not seen until it is pronounced. He then seeks treatment because of enlargement of a bone, deformity, fracture or a lump due to shortening. Fracture frequently occurs, and tumor formation is an occasional complication. The most common tumor is the giant cell myeloma. Malignant disease may supervene and end life.

The disease includes the destruction of tract of osseous tissue and its replacement by fibrous tissue. Bone is impaired to such an extent that it does not support inflammation. Bacteria destroy the vitality of bone. In tuberculous inflammation, toxic influences cause disintegration. Toxic substances may be produced by micro organisms, tissue metabolism and intestinal factors.

The treatment must be directed against the cause. Foci of sepsis must be removed and errors in diet corrected.

Various surgical procedures have been adopted. Curettage of the fibrous material, removal of mass of localized patch, and amputation have been done.

JOSEF MROVETZKY, M.D.

Moore, S. Observations on Osteitis Deformans. *Am J Roentgenol* 9 3 2, 507.

Since Paget's article on osteitis deformans appeared in 1877 nothing further has been learned regarding the etiology and pathogenesis of the disease.

Osteitis deformans may be defined as a general disease of the skeleton, the chief manifestations of which are bone enlargements and subsequent deformity. It usually progresses slowly gradually involving the entire skeleton, but in some cases may remain in single bone. There are numerous theories as to its cause. Geographical, climatic, and racial factors, and sex seem to play no part in the etiology. Syphilis, carcinoma, and infectious diseases have not been demonstrated as a cause and trauma does not seem to be of importance. The most striking association is that of circulatory disease, both arterial and cardiac.

The onset of Paget's disease has never been described. When the condition is manifest it has been present for some time. Its progress may be rapid or slow. The bones of the thigh, legs, pelvis, and skull are first involved. No bones are exempt, but the forearm, hands, and feet are seldom involved. When the disease is fully developed it causes increasing deformity and disability. Both mental and physical activity are impaired. The symptoms

vary with the stage of the condition. The deformities seem to be due to weight bearing upon the softened bone, but this theory does not explain deformity of the skull. In Paget's opinion the bones increase in length as well as other dimensions, and curvature is produced by fixation of the extremities of the softened bones.

The symptoms are almost wholly objective and the diagnosis must rest on the objective findings. The X-ray findings are changes in the texture, size, form, and outline of the bone involved. An increase in bulk is the most significant. A rarefied condition is manifest in the cortex of the long bones. The compact layer is replaced by a wide-meshed, reticulated structure, in the interstices of which is a softer tissue relatively deficient in calcium. A later appearance shows bone condensation.

Osteitis deformans must be differentiated from all other bone conditions causing enlargement, deformity, rarefaction, and condensation. These are syphilis, tumor, chronic inflammation, hypertrophic changes, osteitis fibrosa cystica, osteomalacia, hyperostosis cranii, and leontiasis osseum.

In osteomalacia there is no enlargement of the bone. Syphilitic involvement is associated with loss of substance and accompanying repair. Only tumors producing ossification should cause confusion. These are now grown originating in the bone and metastatic carcinoma. Osteoplastic carcinomata of the bone usually cause an asymmetrical increase in size. Chronic inflammatory states exhibit predominance of repair processes. The author cites four cases as follows:

CASE 1: The patient was a man 53 years of age who, in his forty-ninth year suffered fracture of the left femur. Prompt and satisfactory union resulted. Six months later he again fractured the same femur at a slightly higher level and again there was good repair. X-ray examination at that time suggested sarcoma but the final diagnosis was Paget's disease.

CASE 2: The patient, a woman aged 58 years, complained of nervous tremors and pain over the entire left side of the body. Examination revealed spindle-shaped enlargement of the left tibia, which was bowed outward and forward. X-ray examination revealed typical Paget's disease.

CASE 3: The patient, a woman aged 45 years, following the extraction of a tooth, pain began in the upper portion of the left side of face. Later several bones in the nose were removed. Examination showed prominence of the left side of the face. The teeth were widely separated and the alveolar process prominent. A gasman operation gave incomplete relief. Difficulty was encountered on account of the great vascularity of the skull, which was increased in thickness. The X-ray examination revealed typical Paget's disease.

CASE 4: In this case the diagnosis was made from the X-ray picture alone. The third lumbar vertebra was enlarged symmetrically and showed the textural changes characteristic of Paget's disease.

JOSEF MROVETZKY, M.D.

Hutchinson, R. W.: The Roentgenological Diagnoses of Bone Tumors. *U S Armed F B H* 1934, xviii, 679

In the X-ray diagnosis of bone tumors the point of origin of the growth must be considered first, that is, whether it arises from the cortex, the medulla, or the periosteum. Carcinoma is ruled out if the growth originates in the periosteum as the latter contains no epithelial cells. Carcinoma cells are metastatic in bone and begin in the region of the nutrient artery. Sarcomata may originate in the cortex, medulla, or periosteum.

The second point to be considered is whether the cortex has been destroyed or not, and if it is not destroyed, whether it is expanded. Benign tumors expand the cortex rather than destroy it.

The third point is that of bone production. Carcinoma never produces new bone. Round-cell and spindle-cell sarcomata do not produce new bone. Consequently periosteal, osteosarcomata, enchondromata, osteomata, and hematomata must be considered. Malignant disease lays down new bone perpendicular to the shaft. Benign tumors lay down new bone parallel to the shaft.

The fourth point is that of invasion. Benign tumors push aside the soft tissues, while malignant tumors invade the soft tissues, in their growth. Metastatic carcinoma from the prostate to the pelvic bones and to the femur appear to be definitely increased in density. Bone destruction is less evident. Metastases from carcinoma of the breast, lungs, skin, or uterus cause destruction of the bone with no increase in density.

Hypertrophism has the same appearance as carcinoma of the prostate. Round-cell sarcoma originates in the medulla and destroys in all directions. The cortex is destroyed and not expanded. Round-cell sarcoma invades the surrounding tissues early. Spindle-cell sarcoma does not invade or destroy as rapidly as the round cell sarcoma. Periosteal sarcoma is the most characteristic. It originates in the periosteum and invades the tissues with little change in the appearance of the cortex. In the early stages a number of fine lines of calcium deposits can be seen extending perpendicularly into the soft tissues. Later on the cortex is invaded and destroyed. Osteosarcoma appears more dense and massive and shows much earlier destruction in the cortex than the periosteal sarcoma. It occurs also in youth and early adult life. Periosteal and osteosarcomata are the only malignant tumors producing new bone. In comparison with most sarcomata, giant-cell sarcoma is benign. It does not tend to metastasize. It arises in the medulla and destroys a portion of the cortex. Its common site is the ends of long bones, usually the femur and tibia. It is a tumor of middle age.

Mycioma is a malignant growth which grows slowly. It shows multiple focal areas of destruction under the cortex. The cortex is thinned out but never destroyed. The presence of Bence-Jones bodies in the urine assists in the diagnosis.

Myxomata resemble bone cysts. They occur in youth and may become malignant.

Enchondromata and osteochondromata may be entirely or partially cartilaginous in origin. They occur early in life and originate in the medulla over the epiphyses. They expand, but do not destroy the cortex.

Osteomata are benign tumors growing from the cortex. In structure they resemble bone. They do not invade, but push the tissues aside, and usually occur in the young.

Bone cysts resemble enchondromata. They originate in the medulla and expand, but do not destroy the cortex.

Fibromata are rare tumors. They do not invade and contain no new bone. They cannot be differentiated from bone cysts.

Hemangiomata are not bone tumors, but large, round, soft tissue swellings. They contain old bodies of calcification. Ossifying hematomata are commonly seen in cases of scurvy in children. Calcium is laid down in layers parallel with the shaft.

JOSEF MICHENER, M D

Tyler, R. G.: Roentgen Gastro-Intestinal Studies of Patients with Chronic Deforming Arthritis. *Am J Roentgenol* 9 3, 2, 424

Between thirty and forty cases of chronic deforming arthritis were studied with the X-ray. Bands and kinks were found in the ileum and large intestine. Surgical correction of the faulty intestinal mechanism gave relief in some cases and medical treatment seemed to give relief in others.

The conclusion is drawn that in cases of chronic arthritis routine and thorough gastro-intestinal examination is well worth while.

DEWITT CARR, M D

Brown, H. and Fleming, H. W.: Cervical Rib. *Surg Clin N Am* 1933, iii, 65

The author reports three cases. The first was that of a girl 3 years of age who complained of a sharp pain in the right shoulder of recent onset. The X-ray revealed the presence of a cervical rib on the right side. Since the first examination the pain has lessened considerably and there are no nerve or circulatory changes. This case is to be kept under observation.

In the second case certain types of exercise had caused pain in the right shoulder and down the right arm for the past twenty years. The X-ray revealed the presence of a cervical rib on the right side. Operation was advised but not accepted.

The third case was that of a woman 50 years of age with blueness and numbness of the right hand which was aggravated by cold, pain from the shoulder to the elbow, and swelling of the extremity. On examination a small hard tumor mass was found in the right supraclavicular fossa. On pressure this mass caused pain down the arm. Palpation was noted high in the axilla but not below. The blood pressure in the right arm was zero. The pain

was felt over the distribution of the radial and median nerves. The surface capillometer showed a brisk flow in the left arm but a very sluggish flow in the right.

At operation the vertical limb of the incision was carried along the anterior border of the lower cervical portion of the trapezius, and the horizontal limb little above the middle of the right clavicle and extending down almost to the sternoclavicular joint. The external jugular vein was ligated. The incision being extended deeper the transverse cervical artery and vein were severed and tied. When the brachial plexus was exposed the rib was found pressing upon the posterior cord, thus causing the radial and median nerve symptoms. The scalenus medius muscle as separated and the rib exposed, trapped of its muscle attachments, and removed from the transverse process of the seventh cervical vertebra with its perosteum intact. The wound was then closed without drainage.

Recovery in this case has been slow but steady. The circulation has improved but the hand is still sensitive to heat and cold. There is no longer any pain.

Cervical ribs are bilateral in 80 per cent of cases, but in 95 per cent of these the symptoms are unilateral. Certain of the lower animals have cervical ribs. They are present also in the foetus but disappear before birth. Their occurrence in man may be considered as static or reversionary type. As frequently there is neuropathic diathesis in these cases, operation sometimes does not entirely relieve the symptoms. The symptoms are nervous or circulatory depending on the relationship of the rib to the plexus and artery. The X ray usually renders the diagnosis certain.

WILLIAM J. DICKETT, M.D.

Camdenborough, C. Osteo-Arthritis of the Spine.
Proc Roy Soc Med Lond 9, 3, 35. Sect Med 63.

The author reviews 96 cases admitted to the hospital with a provisional diagnosis of renal calculus. He classifies them as follows: Calculi present, nineteen cases (9.7 per cent); calculi not present, 44 cases (73.4 per cent); cases not re-examined, twelve (6 per cent); osteo-arthritis of the spine, seventeen cases (8.7 per cent); nephroptosis, one case (1 per cent); calculous deposits, two cases (0.9 per cent); and bone growth, one case (0.5 per cent).

This classification shows that there were nearly as many cases of osteo-arthritis as cases of stone. Gouldenborough therefore concludes that many cases of osteo-arthritis of the spine have been diagnosed as renal calculus. He mentions three types of osteo-arthritis of the spine—the completely distinct and the third combination of the two.

In the first type the earliest indication is the appearance of small spurs on the lateral borders of the articular margins of the vertebrae. These spike-like projections tend to coalesce and form complete bridges between the several vertebrae. The disease

may be unilateral or bilateral. The part chiefly affected seems to be the dorsal region.

The second type is uncommon. It appears to consist of an erosion of the intervertebral fibrocartilaginous disc leading to fusion of the vertebrae.

Examination of dried skeleton spines showed that in the first type there is a deposition of calcium salts in the lateral borders of the anterior common ligament which may spread and fuse over the entire anterior surface.

In the X ray picture the outlines of the normal bony vertebrae, which are more opaque show through the other shadows. This proves that there is no true bony proliferation of the vertebrae.

The author believes the explanation of the two distinct types of spinal osteo-arthritis rests upon the fact that all osteo-arthritic conditions there is an atrophy of the muscles of the surrounding parts. The ligaments then become slackened and permit the approximation of the bony segments. Pressure causes erosion of the cartilage, and ossifying changes begin in the anterior ligament before the erosion. If the ossifying process has progressed far enough, the first type of the condition results, and if the erosion outstrips the ossifying process the result is the second type of osteo-arthritis.

JOHN MITCHELL, M.D.

Schuster, O. F. Limitation of Flexion of the Foot Through Shortened Calf Muscles and Its Non-Surgical Correction. *Med Times*, 9, 3, 3, 1918.

The condition described is found most frequently in women who have worn high heeled shoes constantly for several years. Other causes are prolonged rest in bed due to illness in which the foot is allowed to drop, oak-foot flatfoot muscle trauma, and polyomyelitis affecting the anterior muscle group.

The symptoms of restricted dorsiflexion are ligatures, pain in the front of the lower leg, cramps in the calves, and pain in the soles of the feet. The foot cannot be dorsiflexed to the normal angle of 75 to 70 degrees. The defect usually does not become noticeable until low heeled shoes are worn.

Tenotomy is undoubtedly the correct procedure for pronounced shortening. Stretching of the calf muscles under anesthesia followed by fixation in plaster cast is a good remedy but many patients cannot spare the time necessary for this treatment. In the method employed at the foot clinics of New York for the past ten years the calves are held for about half an hour at a temperature of 90 to 100 degrees Fahrenheit and then treated by deep-heating massage for about fifteen minutes and the inverted foot forcibly forced on the leg several times to the limit of tolerance. This is done every second day and the patient is given appropriate exercises at home. A moderate shortening will be corrected in five to eight weeks without any discomfort or loss of time.

The many devices designed for the correction of the condition are not necessary in the milder cases and can be used only when the patient can afford to

abstain from work. Among those who have devised apparatuses are Heydenhain, Hoffa, Strobmeier, Scarpa, Little and Shaffer. The Shaffer apparatus, which is the best known and most widely used, was designed primarily for the correction of contracted feet or non-deforming club-foot.

The author has devised an apparatus for the gradual stretching of the posterior muscle group with the foot in inversion. Such operated by springs. As in the use of the Shaffer shoe the stretching should be preceded by deep massage of the calf muscles or by baking and massage should not be continued longer than twenty minutes at each sitting and should be carried out daily if possible.

The patient must supplement the treatments with exercises at home, morning and night. The author recommends three exercises tending to lock the medial joint and dorsiflex the foot.

DANIEL H. LEVINTHAL, M.D.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Dunn, G. R. The Obliteration of Bone Cavities in Chronic Osteomyelitis by Free Fat Transplantation. *U. S. Army Med. J.* 9:3 379

From experimental work on dogs and from the results in clinical cases Dunn believes that the free transplantation of fat is a valuable procedure for the obliteration of cavities in bone due to osteomyelitis. These cavities should be practically free from bacteria at the time the transplantation is done. In Dunn's opinion, the fat grafts survive as such and are not replaced by bone.

DUNN, W. CHAS. M.D.

Derrance, G. M., and Bransfield, J. W. Immediate Plastic Operations in Injuries Involving Tendons or Joints. *J. Surg.* 9:1 103

The authors discuss immediate plastic operations upon injuries involving tendons or joints. Debridement, primary suture and mechanical cleansing of the wounds should precede the plastic, but no delay should be permitted after the preliminary cleansing. Exposed tendons or joints are apt to become infected and to slough, and antiseptic dressings tend to destroy the linings of joint cavities.

Three cases are reported in which good results were obtained by an immediate plastic operation. The first was a case of exposed tendon and joint; the second, a palmar injury with exposure of the superficial tendons; and the third, a compound fracture with an open joint and exposure of the superficial tendons.

The technique was that usually employed for reconstructive plastic surgery of the hand. An abdominal flap, as raised by means of parallel incisions, the potentially infected hand was placed under the flap after careful mechanical cleansing, and the edges of the wounds were sutured.

JOHN MITCHELL, M.D.

Steindler A. Orthopedic Surgery of the Upper Extremity. *Med. and Surg.* 9:3 43

The disabilities of the upper extremities are morphological and dynamic. By this the author means that they are due to position or to motor inability. He prefers regional dissections because positional and dynamic dissections are not practical.

The position of greatest disability of the shoulder is fixation in adduction and inward rotation. The principal motion of the shoulder is abduction. Abduction is inhibited by contractures following injuries of the capsule tendon tears, subdeltoid bursitis and birth palsy bone injuries and other conditions. In all kinds of paralysis it may be entirely lost.

The position of greatest disability in the elbow is extension. The principal motion is flexion. Flexion extension is inhibited by contractures after bone injuries, ischemic contractures, traumatic and inflammatory ankylosis of the joints, and all forms of paralysis.

The position of greatest disability in the wrist is full flexion. Flexion deformities occur in all kinds of injuries.

The position of greatest disability in the finger is hyperextension in the metacarpophalangeal joints in the thumb that of abduction extension. Finger motion is inhibited following injuries of the bone and inflammations about the joint.

In shoulder contraction due to birth palsy the treatment of choice is bloodless manipulation of the joint. In manipulating the joint the all important question is whether the lesion is intra-articular or extra-articular. Intra-articular lesions do not permit correction by forcible manipulation. In manipulation of joint harboring adhesions blood effusion will form more adhesions.

When the contracture of birth palsy does not yield to passive stretching, Sever's operation, which consists essentially of an open tenotomy of the contracted tendon of the subscapularis, is performed. Cases in which humeral salts are present in the supraspinatus tendon must also be operated upon.

The flail shoulder is encountered in paralysis of the deltoid muscle in anterior poliomyelitis. The surgical indication is arthrodesis of the shoulder. The shoulder joint is opened by a U shaped incision around the acromion, the tip of which is chiseled through and deflected down. After the operation cast is applied with right-angle abduction and slight forward flexion in children, and abduction to 70 degrees and slight forward flexion in adults. The cast is left in place for three months and then split for active and passive motion.

In the elbow joint arthroplasty is indicated. A U shaped incision is made from the outer to the inner border of the humerus, crossing the base of the olecranon. The articular ends of the bones are carefully contracted and the joint is immobilized in plaster in acute flexion for eight or ten days. A splint is then applied and active motion begun. Passive motion follows three weeks later.

The flail elbow is encountered in paralysis due to anterior poliomyelitis. Arthrodesis of the elbow cannot be applied to children because of the uncertainty of the outcome. The flexors of the fingers and wrist can be used for flexion of the elbow by transposition. By this method the flexor carpi radialis, palmaris longus, and flexor carpi ulnaris are isolated from the inner epicondyle of the humerus together with the superficial head of the pronator radii teres, pulled upward and fastened into the intermuscular septum of the humerus between the biceps and brachialis anticus muscles higher up. The leverage of these muscles is thus changed so that they act as flexors of the elbow. After the operation the elbow is placed in a splint and two or three weeks later active and passive motion is begun. The splint remains in place for from 1 to six months.

In pronator contractures of the forearm the surgical procedure is resection of the pronator radii teres and section of the pronator quadratus.

In cases of flexion contracture of the wrist resulting from spastic paralysis or Volkmann's contracture conservative treatment should be used first. Operation, if resorted to, consists in lengthening the flexor tendons. With regard to the drop wrist, correction of the deformity and the restoration of function must be attempted. Tendon transplantation is indicated when it can give not only active extension but also stability in active extension. It is indicated in some cases of peripheral paralysis, such as musculospiral paralysis, in which the entire flexor group of muscles is intact. In the majority of cases, however, arthrodesis is necessary. A simple dorsal incision of the wrist is made between the extensor pollicis longus and the extensor indicis proprius. A wedge resection of the lower end of the radius and part of the scaphoid semilunar bones is done. The cast is applied in dorsiflexion.

In paralysis of the thumb the thumb is adducted and cannot be opposed to the other fingers. For the correction of this condition a plastic operation is done in which the long flexor is split and its outer half turned upward and backward to the base of the basal phalanx.

In the spastic group the catching of the thumb under the fingers is prevented by the implantation of the extensor indicis proprius upon the long extensor of the thumb.

In osteoarthral fractures the pedicle flap method is used. The after-treatment is especially important.

Success depends upon muscle education and re-education. The author has introduced and developed standard exercises for this purpose.

JOHN HIRSCHMAN, M.D.

Hirner, W. *The Treatment of the Flail Elbow Joint with a New Operation of Arthrodesis*. *Lancet* 93 (1911) 795.

Hirner describes an original operation for producing arthrodesis of flail elbows. With the use of the posterior incision, the muscles are freed from the

bone but the periosteum is left attached. All diseased bone is removed, and for a short distance above the end of the humerus the periosteum is raised to a cuff so that the end of the bone is left bare.

The end is then made square with rough file and a square hole is made in the region of the upper ends of the radius and ulna. The square end of the humerus is fitted into the square hole and a drill hole is made from side to side through the radius and ulna and through the lower end of the humerus. A stout silver wire is then threaded into this small drill hole and brought around the bone and fastened so that the thumb will come in front of the joint. The area is then covered with muscle and the wound closed without drainage.

Depending upon the manner in which the square hole is made, the elbow can be fixed at practically any angle desired.

The author reports two cases with very satisfactory results. He condemns the use of artificial silk ligaments and fascial transplants and expresses little faith in the Jones skin plastic fixation of the elbow. He prefers arthrodesis to arthroplasty.

DOROS W. CARR, M.D.

Cowen, J. F. *Excision of the Knee Joint*. *Surg. Clin. N. Am.* 1912, 6, 633.

Excision of the knee joint usually results in firm union between the femur and tibia. Such osseous union is demonstrated by stereoscopic roentgenograms in which bony trabeculae may be traced from the femur to the tibia. When an irregular area of lessened density is seen between the bones, there is fibrous union. Occasionally definite clefts appear between the bones and upon examination the patients demonstrate varying degrees of motion in the knee joint.

In the author's opinion the difference is not due to infection, because all the cases operated upon healed by primary union and any of the results described may occur in cases of old traumatic or infective arthritis.

Of nineteen excisions done upon the normal knee joints of dogs, two were followed by normal union, three by firm fibrous or fibrocartilaginous union, eight by loose fibrous union, and six by a definite new joint with cartilage and synovial membrane. Failure of bone union was due to local factors.

In a second series the sawed bone surfaces were fixed in various ways, for example, by shortening and suturing the capsule by wiring or by overlapping the patellar tendon. In every instance there was bony union along the entire extent of the sawed surfaces.

The reparative process proceeds in an orderly manner. Hemorrhage from the vessels occurs into the marrow spaces, and the blood is extravasated for varying distances into the marrow of each bone. Coagulation takes place and fibrin which is deposited on the sawed surfaces seals the marrow spaces and its vessels. Fibroblasts proliferate and convert

lymphoid int fibrous marrow. Capillary buds of endothelium appear in the marrow spaces. The clot is invaded and replaced by granulation tissue consisting of an ordematous net work of fibroblasts and endothelial buds.

Successful union most occur if vascular communication is established between the bone ends. The more accurate the approximation the smaller the blood clot and the more certain the osseous union. In all cases in which the bones were kept in apposition bony union occurred rapidly.

Faithy approximation of the bone favors the in growth of granulation tissue from the periosteum, and as this is a hardy connective tissue it invades and organizes the clot between the bones rapidly thus preventing fusion of the vessels of the medullary canals.

The plane mode of excision often results in poor juxtaposition of the sawed bones because of the difficulty of sawing in the proper horizontal plane. If a uniform contact surface is not obtained a varus or valgus malposition results.

The author prefers the concave convex method. The lower curved incision cross the joint is used. This is continued through the patellar ligament and the joint surfaces are exposed. The semilunar cartilages and crucial ligaments are dissected free. The femur is sawed in a plane parallel with the under surfaces of the condyles. The tibial head is sawed across in concave manner from front to back. The posterior ligament is shortened by four mattress sutures of kangaroo tendon. The leg is then extended and the wound closed. Plaster of Paris is applied from the groin to the foot. In six weeks the cast is replaced with brace which is worn until union is solid. JOHN MITCHELL, M.D.

MILLER O. L. Tendon Transplantation in the Lower Extremity. *South M & S* p. 3, 1909, 308.

The author states that surgery is less effective the nearer the approach to the vital centers of the nervous, respiratory, circulating, or digestive systems. In the lower extremity the result is poorer the nearer the approach to the hip. The most successful result in tendon transplantation can be obtained only over stable skeletal lines. Tendon transplantation about the upper thigh is limited to two procedures: (1) transplantation of the fascia lata into the substance of the trochanter to relieve the laxity in the joint capsule and the rotating head, and (2) transplantation of the fascia lata into the femur just below the trochanter to form an abductor of the hip in the absence of the gluteus medius.

Re-enforcement of the lagging quadriceps by transplanting a hamstring forward into the patella is often satisfactory. A tendon transplantation yet done about the knees has been able to relieve the badly flexed or flaccid knee.

To treat paralytic foot successfully means to master foot stabilization. Deformities of the foot may be classified as the paralytic club foot with the tibial muscles stronger than the peronei; the para-

lytic cl b-foot (equinus) with the tibial and peronei muscles fairly well balanced, but the weaker dorso flexors overcome by the strong gastrocnemius soleus; the paralytic flat-foot with the peronei stronger than the tibials, and calcaneus, with a dorsiflexor stronger than the Achilles group. Valgus is frequently associated with calcaneus deformity. Not all paralytic feet with valgus demand transplantation of the anterior tibial tendons; nor do all feet with valgus demand transference of the peronei or the extensor proprius hallucis tendons. Stabilization will take care of these deformities. When the foot is in varus and the muscle above even slight strength the anterior tibial tendon should be transplanted. The peroneus longus and brevis tendons are transplanted into the heel cord. If they show power when the foot is in valgus deformity the peroneus longus may be inserted into the internal cuneiform and the anterior tibial tendon. The peroneus longus works well as an adductor. In valgus foot the extensor proprius hallucis may be used to reinforce the anterior tibial tendon, and in hammer toe deformity may be transplanted to the head of the first metatarsal. In paralysis of the Achilles tendon with active peronei, the peronei may be transplanted to take the place of the Achilles tendon. JOHN MITCHELL, M.D.

SILVER D. The Operative Treatment of Hallux Valgus. *J Bone & Joint Surg* 925 xii, 5.

In hallux valgus the great toe is deflected toward the outer border of the foot and there is subluxation of the phalanx on the metatarsal head. Prominence on the inner side of the great toe joint is caused by bone hypertrophy and bunion formation, but mainly by exposure of the inner portion of the head as result of the subluxation. The internal lateral ligament and the inner portion of the capsule are stretched, while the external lateral ligament and the external portion of the capsule are correspondingly shortened. The extensor and flexor tendons and sesamoid bones are displaced to the outer side of the joint, and the abductor hallucis, which is displaced toward the plantar surface, is therefore at a mechanical disadvantage.

At operation the usual incision is made; the fibrous capsule is exposed, and Y shaped incision is made through the internal lateral surface to form distal flap with its base attached to the phalanx and dorsal and plantar flaps. The great toe is then abducted, a thin layer of the cortex with exostoses is removed with small portion of the articular cartilage and the edges are rounded off.

For the formation of an external capsular flap superior and inferior longitudinal incisions are made through the capsule from the top of the phalanx back to the posterior limits of the capsule. These incisions are then connected by vertical incision through the capsule close to the base of the phalanx, and at the same time the attachments of the abductor and obliquus hallucis are divided. The great toe is then held in 45 degrees abduction, the distal flap of the new internal lateral ligament is

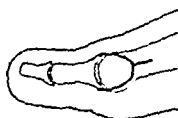


Fig. 2



Fig. 3



Fig. 4

Fig. 2. The point of the V-shaped incision, which is made through the internal part of the bone, shown by the line, is closed (flap, dorsal flap, plantar flap).

Fig. 3. Point of the incision through the external portion of the capsule shown by the interrupted line.

(After: *Operative Treatment of Fractures*, Vol. 2.)

Fig. 4. Method of suturing the dorsal and plantar flaps. In the case of the dorsal flap, the back of the bone is the dorsal side of the flap. In the case of the plantar flap, the front of the bone is the plantar side of the flap. The flaps are sutured to the bone by the V-shaped incision through the dorsal and plantar flaps.

put red in position to the dorsal and plantar flaps. The V-shaped incision is closed, and an elastic splint is applied to maintain extreme abduction.

In the first treatment, the dorsal bandage is applied distal from within out, and over the distum to overcome the spreading of the metatarsal and the adductor bone red to the small toes. The second treatment, the outer border of the foot is begun in a week, and shows the bone in from three to four weeks. The splint is removed and replaced by a soft strap to maintain correction. An anterior leather lacing is substituted for the dorsal bandage to correct spreading of the tarsal arch after walking is begun. Hot and cold baths are employed with physical abduction and foot exercise of the tarsal (walking) proper walking and walking. Results are as follows.

FRACTURES AND DISLOCATIONS

Hess, S. L. Fractures in Transplanted Bone. *Surg. Gynec. & Obst.* 9: 5, 1914.

Graft of any tissue depends for success upon the ability of the cellular element of the graft to remain viable until such time as new circulation is established from the host.

Some investigators claim that the osteoblastic cell of bone (osteoblasts) survive and aid in the reparative processes. Others maintain that there is complete degeneration of the cells of the transplant and that reparative processes depend upon osteoblastic growth from the host.

The author believes that transplanted bone has inherent power of regeneration.

Immediately after injury, outpouring of blood and lymph occurs. This is followed by a maximum inflammatory reaction with the formation of granulation tissue and the organization of the blood clot. Chondroblasts appear in increased numbers in the regions of the periosteum and endosteum and about the haversian canals. A cartilaginous callus is formed, which is first transformed into osteon tissue and later becomes calcified.

Following the transplantation of a bone graft an initial stage of degeneration occurs, but the microscope reveals the survival of some of the osteogenic cells in the graft. Proliferation of new bone is observed. These processes occur in transplanted bone even when it is transplanted into muscular tissue and not from other connective tissue.

Four groups of experiments were performed upon dogs to determine whether there is sufficient energy for bone repair by fracture and transplant and for the regeneration of the transplant itself.

I. The first group an entire metatarsal or metatarsal as completely removed from the foot, fracture red and replaced in the normal position in the foot. In three of the six cases there was definite union of the fractures in the reimplanted bones. In the fourth, angular deformity occurred but callus was present. In the remaining three cases the period of observation was too brief for definite conclusion.

In the second group of experiments the third metatarsal was removed, fractured and transplanted into the muscles of the back. In five of the seven experiments there was definite evidence of union of the fractures. It also showed evidence of cartilage formation to the osseous stage and, as similar to the healing of fracture in normal bone.

In the third group of experiments bones were removed, bled, and reimplanted in their normal position. There were no signs of proliferation in this group. The bled bone acted as foreign substance and showed evidence of degeneration.

In the fourth group of experiments bones were removed from the feet, fractured, bled, and transplanted into muscle. In all cases of cartilaginous or osseous proliferation was found.

In the fifth group of experiments metatarsal as removed and fractured, one half of the bone as bled, a 3/4 both fragments, the bled and the unbled were reimplanted. It was found that there is sufficient power of proliferation of the cells of one half of reimplanted bone to produce callus sufficient to union it to the dead remaining half.

In the sixth group of experiments the metacarpal was removed and fractured, one half was boiled, and both halves were embedded in the spinal muscles with their fractured ends approximated. One experiment showed definite union of live with dead segment.

The author concludes as follows:

1. Fractures in transplanted bone even when buried in muscle united firmly and in manner similar to that of fracture under normal conditions.

2. Fractures in boiled transplanted bone never united or showed signs of proliferation.

3. Fractures in transplanted bone, one half of which had been boiled and the other half of which was alive united even when the bone was buried in muscle.

4. The experiments reported are a crucial test of the independent, inherent, osteogenetic power of the cells of transplanted bone.

JOHN MITCHELL, M.D.

Behrend, M. The Longevity of Plates and Other Foreign Bodies in the Treatment of Fractures of Long Bones. *Atlantic M J* 9 3 xxvi, 585.

The length of time that plates and other foreign bodies used in the treatment of fractures may remain in position depends upon the type of fracture—whether it is simple or compound—and whether infection results following the operation.

In simple fractures in which it is possible to maintain perfect alignment with metal plates it is not necessary to remove the plate unless there is irritation or infection.

Metallic substances may remain in situ indefinitely without causing inconvenience. As proof of this the author cites the case of habitual dislocation of the ulna in which nails put in place in 1906 remain in the arm today, and the case of fracture of both femora in which Sherman plates are still in place after four and a half years.

The necessity for the use of metal plates is not as common in fractures of the upper extremity as in those of the lower.

Proper position is essential for good function. If it is impossible to obtain the position necessary for good function an open operation must be done.

According to Lane plates need not be removed if the operative technique is correct. The author uses the Lane technique entirely.

In conclusion Behrend states that the surgeon should never fail to remove foreign material when necessary, should treat fractures by the closed method whenever possible, and should not hesitate to perform an open operation when it is indicated.

JOHN MITCHELL, M.D.

Sever, J. W. The Rational Treatment of Fractures of the Upper End of the Humerus. Report of End-Results. *J Am M Ass* 9 3 lxxx, 603.

In careful review of the literature the author was unable to find any reference to the treatment of fractures of the upper end of the humerus in the

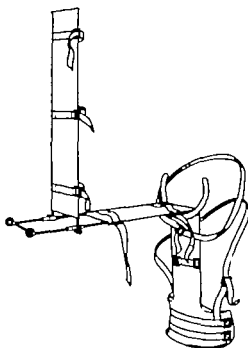


Fig. Abduction splint. There is sliding upright for the forearm, with cross-bar at the end of the horizontal arm for the attachment of traction. The split ring at the axillary end is for fixation of the shoulder. The critical body portion should extend from the axilla to the crest of the ilium, almost to the trochanter, just long enough to allow comfortable sitting position. It should be no wider than the width of the arm.

position of abduction, external rotation, and elevation.

These fractures are generally caused by a fall with the arm held in abduction, the hand pronated, and the humerus outwardly rotated. The tuberosity of the humerus comes forcibly into contact with the tip of the acromion, and as a result the tuberosity is broken off. There may be a fracture of the neck of the humerus, a dislocation of the humerus or a combination of these conditions.

There are two main types of fracture of the greater tuberosity. In one there is a crack running through the base of the tuberosity and in the other the entire tuberosity is forcibly pulled off and rotated backward and outward by the pull of the supraspinatus, infraspinatus, and teres minor muscles. These fractures may be complicated by fracture of the surgical neck, impaction of the head and shaft, or dislocation.

Entire epiphyseal displacement is not uncommon in young persons with fractures of the neck of the humerus before the epiphysis is united. The entire head may be rotated upward and backward, and often there is associated dislocation. Sometimes this fracture and dislocation may be manipulated into position, but usually open reduction is necessary.

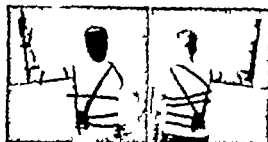


Fig. 3. Splint applied. There is traction on the arm. The figure-eight strap around the left elbow prevents the arm and splint from rotating.

The more serious types of fractures are associated with capsular tears and radiate into the joint, which add considerably to the subsequent disability. Consequently, with motion after reduction is important factor in the after treatment, and this is accomplished much more easily with the arm in the abducted and externally rotated position than by the old method of holding the arm in adduction.

Fractures of the upper end of the humerus are classified as follows:

Class 1. Simple fracture of the greater tuberosity without displacement. The type with upward and outward rotation of the fragment may be associated with dislocation of the shoulder.

Class 2. Simple fracture of the surgical or anatomic neck without displacement or with impaction of the fragment. (1) With displacement of the fragment but without dislocation of the head. (2) With displacement of the fragment and complete dislocation of the head, generally a comminuted fracture.

Class 3. Fracture of the neck of the humerus, generally comminuted. With fracture of the shaft and without dislocation of head.

Traction with abduction and external rotation may be accomplished by use of the ordinary Thomas' splint while the patient remains lying during the treatment. Extension may be obtained by means of a figure-eight strap around the arm and for arm from point considerably above the elbow or traction may be obtained from splint as applied to the arm and forearm with the elbow held at right angles. Ten days of traction is sufficient time to insure enough union to permit the patient to be up and about in an ambulatory splint maintaining the correct primary position. In simple unimpacted fractures this splint may be employed from the beginning.

REPORTS 4, BRICK, 21

Anderson, E. J. The Late Results of the Reduction of Congenital Dislocation of the Hip (Sport results back Report in der Naturwissenschaften) *British Journal of Sports Medicine* 1940, 14, 20.

The authors report the findings of subsequent examination of fifteen hip joints which were reduced

12 or more years ago according to Lorenz. Of these 15 were normally and functionally, two showed a result with normal function, three a result with good function, six a result with good function and a normal result, and only one a moderate result. In all of these cases except the one which showed more or less normal result, but also some

Martin, F. D. and Knight, A. Report of New Method of the Neck of the Femur. *Journal of the American Medical Association* 1937, 103, 1317.

The limitations of the new methods of treatment are cases are reported in which a wire is fixed to the trochanter major and a screw is inserted through the neck and head, and screws are used to hold the fractured end in position until union was obtained in three months.

This treatment insures fixation of the fractured end, the best chance for union, free motion in the joint, preserves the circulation, muscles, and permits the patient to be up in about half the time required.

It also shows aged patients, and makes it possible to maintain position soon.

Murdick, C. G. and H. J. Fractures in Children.

This report covers current most frequent femoral fractures, most frequent in the femoral shaft of the head, the neck of the bone, oblique and only 1.

In general the continuous traction reduction as first proposed by Spica and open operation treated between 1910 and 1930, and 1930 to 1940, the adoption of reduced the new method in rare cases are treated with suspension. Satisfactory result was noted.

There are four cases in which re-fracture was necessary because of unusual strain imposed upon the healing bone. Some of the cases showed lengthening on the fractured side, but in 132 there was no shortening when the patient was discharged from the hospital. In sixty-six cases there was 35 cm. of shortening, but at the end of a year thirty-seven of these showed no shortening. This proves that slight shortening in children is often outgrown.

The conclusions drawn are as follows:

Fractures of the femur in children are almost invariably followed by good functional result. A satisfactory anatomical reduction is not essential for perfect function.

The Hodgen or Thomas splint is of value in cases of compound fracture when the administration of an anesthetic is contra-indicated and when skeletal traction is to be employed.

Open reduction is rarely indicated.

Dwight W. Carr, M.D.

ORTHOPEDICS IN GENERAL

Shackleton, W. E.: The Causes of Chronic Backache. *Times* 11/19/34, 34iv, 36.

The more chronic types of backache include the ache of constitutional diseases and toxæmia, reflex backache, postural backache, and backache due to local conditions. Static backache is due to excessive strain and stress on the muscles and ligaments of the back. This occurs in persons who have been confined to bed for several days and in those who have been placed under the influence of an anesthetic. Pain results from overstretching the ligaments which, when unsupported by the muscles, are not strong enough to maintain the normal lumbar curve. Spondylitis deformans is the common postural defect of old age. It is not necessarily due to infection. Habitual labor in an unnatural position causes backache. Compensatory spinal curvature or muscular hypertrophy is frequently seen among laborers. The shortening of an extremity from fracture, congenital, hip disease or uneven growth is another cause of backache.

Backaches follow fevers, tonsillitis, syphilis, influenza, smallpox, tuberculosis, focal infections, metabolic disorders, and toxæmia due to intestinal absorption. These are difficult to explain except on the basis of a loss of muscle tone.

Reflex backache is due entirely to involvement of the pelvic viscera, the sensations being reflected through the ganglion and felt as pain in the corresponding somatic segment. As it descends from the intervertebral foramen, the lumbosacral cord passes over the pelvic brim and is therefore subject to the pressure of pelvic or abdominal tumors or organs. Local conditions causing backache may be metastatic, infectious, or traumatic. Myositis is the most common. Usually this is caused by direct violence. Tumors of the back which cause backache are usually metastases from primary carcinomas of the uterus, prostate, or breast. An X-ray examination is usually essential for the diagnosis.

The chronic infections of the spine are osteoarthritis, osteomyelitis, tuberculosis, and syphilis. Osteomyelitis is not a common spinal lesion and is usually metastatic from osteomyelitis of other bones. Tuberculosis of the spine is very common. Syphilis of the spine is a disease of adult life.

Congenital malformations may cause backache. The common malformations include spina bifida occulta, segmented sacrum, and anomalies of the transverse processes of the fifth lumbar vertebra. Chronic backache may be caused by injuries. Spondylolisthesis or forward dislocation of the fifth lumbar vertebra on the sacrum is a cause of chronic backache. It results usually from the slipping and twisting of the body during the carrying of heavy loads.

Sacro-iliac subluxations are static and traumatic. In cases of the traumatic group there is a definite history of direct or indirect trauma such as a twist or fall on the feet or buttocks.

Compression fractures are fairly common. They may become chronic because undiagnosed. X-ray examination in the blique, the antero-posterior and the lateral positions will aid in the diagnosis.

JOHN MITCHELL, M.D.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Glass, E.: A True, Spontaneous Aneurism of the Left Common Carotid Artery the Size of Goose Egg Which Was Cured by Total Extirpation; Rapid Disappearance of Severe Brain Disturbances Following the Operation (Die durch Totalextirpation gebildeten paraneurotischen spontanen, arteriellen Aneurysma der Carotis communis sinistra mit raschem Verschwinden aller Gehirnstörungen nach der Operation) *Arch f. Klin. Chir.* 93, cxviii, 50

The aneurism of the left common carotid artery reported had developed five days before the case was seen by the thor. The patient, man 33 years of age, experienced a sudden attack of pain in the left side of his neck while playing the trumpet. Loss was denied, but could not be ruled out positively although the Wassermann reaction as negative.

Glass performed total extirpation of the aneurism, which necessitated resection of a portion of the common, external, and internal carotids. The internal jugular vein was also resected.

Immediately after the patient recovered from the anesthetic there were signs of severe brain disturbances, viz. paralysis of the right arm and leg and of the right side of the face. In the evening of the same day total motor aphasia, alexia, praxia, sensory aphasic disturbances, and right hemianopsia developed. By the following morning these had begun to recede, and by the third day the recovery was marked. At the end of a month, when the patient was discharged from the hospital, the cerebral disturbances had nearly disappeared. Ten months after the operation he returned alone to his home in Brazil.

The author attributes the cerebral disturbance to cerebral ischemia rather than embolism because of the absence of Petrie interval and the rapid and practically complete recovery. (Glass)

Ridlen, J. and Berthelmer E. J. Calcareous Degeneration of the Dorsal and Lumbar Aorta as Cause of Backache *J. Am. Med. Ass.* 93, lxxx, 83

Since impairment of the circulation is generally recognized as a source of discomfort in the feet the authors consider it logical to assume that pain in other parts of the body may result from impairment of the circulation of the muscles of the parts. If this is true, calcareous degeneration in the thoracic and abdominal aorta may be cause of backache. The authors report three such cases.

In the back bone spurs and bridges may cause sensitiveness to pressure and stiffness but when the spur impinges on a nerve it is the circulatory change

that is responsible for the pain. Circulatory disturbances which cause ischemia of the muscles are associated with aneurism, pain and stiffness.

Factors predisposing to arteriosclerosis include syphilis, advanced age, alcoholism, gout, diabetes, nicotine, and diabetes. Changes in the vessels which diminish the lumen are obliterating endarteritis, periarteritis, vasculomotor disturbances associated with spasm of the arterioles, and aortic calcification.

Intermittent claudication has an insidious onset with periods of freedom from discomfort, general calcareous of the part involved, with associated paresthesia, absence of pain when the part is at rest and gradual increase of the pain with exertion following exercise that rest becomes imperative. The characteristic feature of the muscular pain due to ischemia is its rapid disappearance after a few minutes of rest and its return with the use of the muscles.

The symptoms of ischemia of the musculature due to calcareous blood vessels is somewhat different. The patient complains of stiffness, muscular cramps, paresthesia, aches, soreness, and pain of the part involved. The pain moderately exaggerated on use of the part, is present constantly for weeks or months and then may disappear for long time. The periods of freedom may be due to the establishment of a better collateral circulation.

The authors conclude that no examination of a painful back is complete and conclusive without an examination of the circulatory system, and that in many cases the treatment of the painful back should be directed by the internist rather than the orthopedist. (WALTER C. BENNETT, M.D.)

Douglas, J. Ligation of the Common Ilac with Fascial Strip for Aneurism *Ann. Surg.* 93, lxxvii, 630

The patient, born male is reported as man 45 years of age who had had amputation of the left thigh because of infection in a compound fracture sustained 21 years previously. Several years later pains in the gluteal region as located on exploration to be an aneurism, probably of the pelvic artery. Subsequently the peripheral veins showed marked dilatation and there was severe pain in the hip. At operation performed June 10, 1922, the iliac vessels were exposed through an incision above and parallel to Psoas ligament and the peritoneum reflected inward. The common internal and external iliac arteries were found dilated, lengthened, and tortuous and the iliac vein dilated. A strip of fascia lata 5 by 5 cm. as removed from the right thigh passed several times around the com-

moniac artery about 5 cm. above the bifurcation and tied. The fascial strip was used because the walls of the vessel were so thin on account of the marked dilatation that an ordinary suture might easily cut through them. The patient made successful recovery; the aneurism has decreased in size and he is now free of pain.

Vra G. B. N. M. D.

Haegele, P. Three Cases of Embolism of the Femoral Artery (Drei Fälle von Embolie der Femoralarterie). *Ursachen und Verlauf*. *Archiv für Klinische Chirurgie*, 1901, 1, 1, 1.

One of the cases reported is that of a 4-year-old woman who had had a cardiac defect since childhood, developed an embolus in the right femoral artery and died the day after an embolectomy. Autopsy revealed high grade mitral stenosis, beginning congestive changes in the lungs and liver, splenic infarct, extensive renal infarcts, and emboli in both iliac and both hypogastric arteries.

The second case was that of a woman 60 years of age whose condition was diagnosed as embolism of the left femoral artery. At operation the thrombus was found much higher. An attempt at removal by arteriotomy and fishing for the thrombus with bronze aluminum wire was unsuccessful because the thrombus was fixed to the arterial wall over the greater part of its extent.

The third case was that of a woman of 5 years who had a mitral stenosis and developed an embolus in the artery of the left lower extremity. The embolus was removed by arteriotomy on the same day, but amputation was necessary a week later and death occurred at the end of a month. Autopsy showed high grade mitral stenosis with hypertrophy and dilatation of the right ventricle and both auricles, a ball thrombus the size of a plum in the left artery, congestion in the lungs, spleen, and right kidney, and smaller thrombus masses in the right iliac artery and both hypogastric arteries.

CLARK (7)

DeJong, P. Alipathery in the Treatment of Phlebitis of the Lower Limbs (Circulathérapie dans le traitement des phlébites des membres inférieurs). *Presse Médicale*, 1901, 1, 1, 1.

DeJong discusses the pathology of phlebitis briefly and recommends kinesotherapy after the subsidence of the fever. In general the patient should at first rest in a supine position with the limb elevated in a hot dress supported with cotton and suspended in a Thomas splint or similar device. The knee in full extension and the foot in a right angle to the leg.

The rectal temperature should be taken night and morning. The immobilization must be continued as long as embolism is feared, but it is generally believed that there is little danger after fever has been absent for three or four weeks. Then, for a week while the limb is still in a splint, hot dressings should be removed. On the third day the limb should be bathed in soap and water and treated with

superficial and soft effleurage with slight mobilization of the toes and metatarsal regions.

On the second day the movement should be tended to the tarsal joint and the patient required to make active movements of the toes. Each day thereafter the movement should be increased. In the second week more active motions should be allowed, and finally the sitting position may be permitted.

The third stage is one of further muscle training with special attention to the quadriceps femoris. A fourth and fifth stage involve muscle training in sitting, standing and walking. The article includes diagrams of the movements recommended.

KILLICK SMITH, M. D.

Brooks, B., and Martin, K. A. Simultaneous Ligation of a Vein and Artery. An Experimental Study. *J. Am. Med. Assn.*, 1913, 9, 3, 1007, 678.

In order to study the changes in an extremity which follow obstruction of the primary artery alone and the simultaneous occlusion of the vein and artery, three series of experiments were done.

Experiments in which the effect on the temperature of the tissues distal to the ligation was studied. It was found that ligation of the primary artery resulted in a fall in the temperature of all the distal tissues which was progressively greater the more distal the tissue temperature was measured. If the artery was obstructed and the temperature of the tissues distal to the ligation became constant at a level below normal but still above room temperature, occlusion of the vein resulted in a further fall. Occlusion of the vein alone caused a fall in the temperature of the entire extremity distal to the occlusion. Simultaneous ligation of the vein and artery resulted in a greater reduction of the volume flow of blood through the entire extremity than ligation of the artery alone.

Experiments to test the frequency of gangrene after ligation of the artery alone and after simultaneous ligation of the vein and artery. The findings in these experiments indicated that gangrene following arterial obstruction is dependent on some other factor than the amount of blood flow going through the vessels distal to the obstruction. When the primary artery of the extremity was occluded, the amount of blood flowing through the extremity was decreased, and when the primary vein and artery were occluded the volume flow was further decreased, but gangrene was less frequent. This was not due to retention of blood in the tissues for the tissues require not blood, but an exchange of certain substances from the blood. It is possible that the distribution of the blood with respect to small areas of tissue may be changed by simultaneous ligation of the vein because this depends on blood pressure rather than on blood flow. Ligation of the vein and artery could cause greater intra-vascular pressure in the capillaries and help to prevent the collapse of these vessels, thus resulting in a more homogeneous distribution of the blood.

It is possible also that an intravascular pressure below a certain level is not compatible with the exchange of nutrient substances from within the vessels to the tissues. Simultaneous ligation of the vein may increase the intravascular pressure so that even though it diminishes the amount of blood flowing through the vessels, the tissue exchange may be adequate to maintain life.

3. Experiments in which the changes in blood pressure in the veins and arteries distal to the ligatures were measured after ligation of the artery alone and after simultaneous occlusion of the artery and vein. The intravascular pressure in both the arteries and the veins of an extremity was decreased by ligation of the artery alone. When the artery was ligated, and the intravascular pressure in both arteries and veins became constant at a lower level than normal, obstruction of the vein resulted in rise in intravascular pressure in both the arteries and the veins distal to the ligature. As the blood pressure in the veins rose proportionately more than that in the arteries, the difference in arterial and venous pressures was less after ligation of both the artery and the vein than when the artery alone was occluded.

SAMUEL KARR, M.D.

BLOOD AND TRANSFUSION

M.oley, G. A Case of Permanent Polycythemia Following Removal of the Spleen (Ein Fall von dauernder Polycythämie nach Splenektomie). *Österreich. Wochenschrift* 9, 1921, 579.

Six years ago the spleen was removed from an 18-year-old girl because of enlargement of the abdomen. At birth, with jaundice, she had had since childhood. The erythrocyte count was 5,000,000 and the leucocyte count 30,000. There were few lymphocytes. The spleen and liver were greatly enlarged. Banti disease as suspected but hemolytic jaundice and splenic anemia could not be definitely determined.

Three years later the patient suffered with headache, dizziness, and dimness of vision and the color of her face was decided bluish red. The blood count showed 5,000,000 erythrocytes and 3,700 leucocytes. The hemoglobin equaled 95 per cent (Sahli). The neutrophile leucocytes equaled 55 per cent, the lymphocytes 37.8 per cent, the mononuclear leucocytes 5.3 per cent, and the eosinophiles 1.7 per cent.

Two years later the red blood corpuscles numbered 6,500,000 and the white cells 9,800. The hemoglobin was 80 per cent (Sahli). The differential blood count showed neutrophils 70 per cent, basophiles 1 per cent, eosinophiles 3 per cent, mononuclears 1 per cent, and transitional cells 3 per cent. The blood pressure was 70-60 (Riva-Rocci). Following the withdrawal of 200 cc. of blood by venesection the condition improved. The red blood corpuscles now number 5,500,000, and the white cells 9,000 while the hemoglobin equals 76 per cent (Sahli).

VON LOGER, MD.

Diemer, T.: Further Results of Attempts to Influence the Hemagglutination Groups (Weiteres Untersuchungsergebnisse über willkürliche Beeinflussung der Hämagglutinationsgruppen). *Wochenschrift für Geburt und Med.* 1921, 227, 484.

Experience has shown that blood transfusions may be followed by disturbances which, in some cases, may cause death and are dependent upon certain substances present in the blood. These substances, agglutinins and agglutinogens, are variously divided, but according to their occurrence, four blood groups have been recognized.

Transfusions are undertaken in accordance with the results of testing the serum from the different groups. To a definite test serum, one or two drops of blood in sodium citrate is added in order to observe the agglutination in the hanging drop. The test serum can be obtained by withdrawing a few cubic centimeters of blood from a large number of persons and allowing it to coagulate.

Another fact brought out by research is that definite processes in the body may change the classification of the subject from one blood group to another. Further research is necessary to determine the factors controlling this change.

KOCH, (2)

Flek, T. L. A Gravity Method of Blood Transfusion. *New York Medical Journal* 1921, 22, 98.

The author discusses the advantages and the disadvantages of the various methods of transfusion. The gravity method, he believes, may be used in from 60 to 75 per cent of cases in which transfusion is necessary. In his method the recipient is on the scale during the transfusion. The apparatus and the technique used are described in detail.

FRANK C. ROSENBERG, M.D.

Nuernberger, L. Clinical and Experimental Research on Blood Transfusion (Klinische und experimentelle Untersuchungen zur Frage der Bluttransfusion). *Zeitschrift für Geburt und Gynäkologie* 1921, 21, 943.

All effects have been observed following transfusion when hemolysis was present in the blood of the donor as well as in that of the recipient. The presence of hemagglutinins in the blood of the donor does not cause disturbances, but their presence in the blood of the recipient has produced the well known picture of intoxication. In order to guard patients from this accident, the transfusion of test doses of 20 cc. has been tried. This as found to be successful but the procedure has the disadvantage that if hemagglutinins are present in the recipient's blood, the pouring of the contents is done in vain. While it would be possible to inject a test from 0.1 to 20 cc. taken from the vein by means of a syringe, this method might expose the recipient to repeated shocks before the proper donor is found.

Nuernberger describes a procedure which has been used also by Ravdin and Glenn and consists in bringing together on a slide and subjecting to gentle agitation one drop of 1 per cent solution of sodium citrate and one drop of the blood of the donor and

of the recipient. If no agglutination appears at the end of three minutes, the blood of the donor may be used. Blood has been kept for transfusion for four weeks by placing it in a sterile flask, adding oxygen and sealing the mouth of the flask by holding it in a flame.

The use of defibrinated blood is discussed briefly and condemned. VONSCHEUR (2)

Burch, L. E. Autotransfusion. *Surg Gynec & Obst* 9 3, xxxvi, 8

The author reports a case in which an autotransfusion was performed on a patient undergoing splenectomy. The operation was difficult as the spleen was bound down by numerous adhesions which were very vascular. Consequently considerable blood escaped into the abdomen. More than 800 cc. of this was recovered, citrated, strained, and injected into a vein at the elbow. By the time the abdomen was closed the transfusion was finished. When the transfusion was begun the pulse was 140 and barely perceptible, but at its completion was 60 and strong, and the patient's color was good. There was no reaction. The recovery from the operation was unusually smooth, and at the end of two weeks the patient was able to leave the hospital. The preoperative and postoperative diagnosis of splenic anemia was confirmed by the pathologic report.

In a study of the literature it was found that of 64 autotransfusions on record all but four were done in Germany.

From the literature the author concludes that autotransfusion is usually a safe procedure. In a limited number of cases there will be a reaction.

Sodium citrate is not essential as normal salt solution is an admirable substitute, and if neither of these is at hand, the pure blood may be re-injected.

Extra-uterine pregnancy will offer the widest field for the procedure, but in wounds of the spleen and liver, wounds of the lung producing hemothorax, and operations in which a large amount of blood is

lost unavoidably it will not only save life but will hasten postoperative recovery.

Contaminated blood should be given as a rectal drip.

Occasionally a tototransfusion may be used to advantage in certain obstetrical complications such as placenta previa, rupture of the uterus, and cesarean section. ROBERT M. GELDER, M.D.

Kayser, A. Experimental Research in Hastening Blood Coagulation (Experimentelle Untersuchungen zur Beschleunigung der Blutgerinnung). *Verhandl. d. deutsch. Gesellsch. f. inn. Med.* 9 3

A new remedy has been added to the large number already used to check hemorrhage. As with the others, the effect consists solely in hastening the coagulation of the blood and increasing the fibrin. Other factors, such as independent action of the vasomotor apparatus etc. are not influenced. Beginning with the observed effect of injections of eupyllin or ethylenediamin in hastening blood coagulation, the endeavor was made to obtain more definite effect by adding at the same time a second blood coagulating agent. The addition of ethylenediamin acetate to calcium salts yields a crystalline substance which is easily soluble in water.

Experiments on rabbits showed that 0.5 cc. of a 10 per cent aqueous solution of this preparation far surpassed in strength and duration of effect all previously known coagulants. In man, a very slow injection of 10 cc. of 10 per cent sterile aqueous solution was given without any undesirable consequences. At the end of twenty-four or even for as long as forty-eight hours the effect was still very pronounced. In case of hemophilia the bleeding was stopped in a few minutes after the usual methods of hastening coagulation had failed. In the author's opinion this remedy may be found of great value in checking internal and surgical hemorrhages. STROHMANN (2)

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE; POSTOPERATIVE COMPLICATIONS

Blair, J. P. Restoration of the Burnt Child.
Surg. St. J. 9: 1, 1915

Restoration of the burned child should be begun soon surgically possible, the earlier the better. The result, prompt epithelialization of the wound is most necessary before all grafting or flap operations are begun. Deformities requiring correction arise primarily from the contracture of scar which replaces the lost skin. A contracture persisting over the child's growth period is apt to be complicated by underdevelopment of the part affected and by permanent fixations of joint and bone distortions. Abnormalities of the scar itself requiring treatment are keloid scars, if duration of ulceration is long, may become cancer, and the persistence of an active pyogenic infection in the scar.

For successful treatment it is necessary first to cut the scar sufficiently to allow the remaining skin and tissue to return to their normal positions. In long standing areas osteoplastic resection joint manipulation or tendon lengthening may also be necessary. Next the resulting raw surface must be covered with epithelium by means of a Thiersch graft (full thickness skin graft) or a skin flap or pedicle flap. The Thiersch graft, which the most is used, produces the poorest cosmetic result and in healing contracts more than the others. A successful full thickness skin graft will contract about one fifth to one half its area and is an excellent substitute except that it tends to greater or less degree of keloid. In keloid fields, however, it is desired and slight tension is not objectionable. The full thickness skin graft (the graft of choice) The flap graft is thicker than the full thickness skin graft, gives some subcutaneous tissue does not contract abnormally and in the pedicle area is not isolated. It is

Grafts of flaps are not as often used as full thickness grafts, but they are useful in the treatment of burns, particularly in the treatment of the face, neck, and hands. They are best supported on wax form or on section of fine mesh sponge. Usually it is best obtained from the thigh, but if too thick it will subsequently grow hair. The full thickness graft is taken from available skin that most closely resembles the skin lost; the area to be covered and is cut exactly the size of the space for which it is intended. Within twenty-four hours it will have active blood supply and will bleed freely when incised. Unless this blood supply is limited or drainage is provided the engorgement will not cure the life of the graft. The thoracic takes this result by the use of fine marine sponge.

wring out as dry as possible and applied under bandage pressure over xeroform ointment gauze. After one, two, or three weeks the dressing is removed and the graft examined. If there is doubt as to the cleanliness of the field it is safer to examine after one week. The pressure must be just sufficient to prevent the engorgement but not to cause ischemia. In the second or third week, if vesicles appear, painting the desquamated surface with 1 per cent aqueous solution of silver nitrate once a day tends to control secondary infection. With its associated destruction. In growing children the full thickness graft takes best and gives the best results. Flaps are obtained from neighboring parts or transferred from flaps on the hand or forearm. When very thin or long flaps are used delayed transposition of the flaps will insure their viability. Homografts from another child even if the blood matches, begin to necrose after two weeks and are slowly lost. Harrow suggests obtaining the skin from a donor of about the same age as the recipient.

In treating an ectropion of the eyelids or lips the Gillies outlay graft (Thiersch graft applied over a wax form) is ordinarily most effective. By undermining the skin edge the raw surface is made three times the ultimate size desired and the Thiersch graft is draped over a wax form of corresponding size. The graft-covered form is held against the raw surface by suturing the tissues snugly around it. On the eyelid and the lip the subcutaneous muscles are closely attached to the skin; a coadhesion must easily reproduced in the Thiersch graft. Ectropion of the nostrils is corrected most easily by making transverse incision across the dorsum of the nose, sliding down the tissues and filling the defect with a full thickness graft.

The eyebrows may be all sustained by full thickness graft taken from the scalp behind the ear. If the graft takes perfectly the hair will grow as full. If slight superficial loss of the graft occurs the hair will be lost, and if the full thickness of the epithelium dies the hair will fall out.

Burnt ears must be excised and the defect covered with flaps or full thickness grafts.

The arm bandage is the side following an anastomosis is released by unrolling the war bands. The defect is filled by full thickness skin graft or pedicle flaps. On the palm of the hand and in the fingers it is well to make the raw surface of the full thickness graft larger than the original defect by undermining the bordering skin and turning it out and in flap form as this will allow for contraction.

In large areas repeated grafting may be necessary to compensate for partial loss or shrinkage of the grafts.

A simple thickening of the scar may be treated by shaving off the ridges and edges and applying a Thiersch graft by the use of radium, by excision followed by the application of a full-thickness graft, or by a sliding flap or a pedicle-flap operation.

WALTER C. BURNETT, M.D.

Pierre, G. W. Surgical Treatment of Burn Scars. *Surg. Clin. N. Am.* 923, 24, 84.

The author reports three cases of severe burn scars treated with considerable success. His conclusions are:

1. Different degrees of burns give different types of scars. The first step in the repair of scars is an accurate estimate of the amount of tissue lost.

2. Early skin grafting of burns is followed by a better scar and fewer contractures.

3. Keloid is a new growth and yields best to radiotherapy. Excision with radiotherapy is often indicated.

4. Plastic repair of burns is best done by flaps. The surgeon should rely mainly on the basic types of flaps.

5. Skin grafts are limited in their application, but are valuable about the eyes, nose, and mouth. Evers' epithelial graft has many uses and is very reliable.

MANUEL H. HOBART, M.D.

ANTISEPTIC SURGERY; TREATMENT OF WOUNDS AND INFECTIONS

Epistel, M. Tetanus (Beiträge zur Lehre von Tetanus). *Fortschr. d. A. u. g.* 1923, 10, 5.

In 122 cases of tetanus there were nine cases in which a true status lymphaticus was present in spite of the presence of apparent organ deficiency. Two cases showed a positive, and two a questionable status thymicus. In five there was a positive and in one a questionable status thymicolymphaticus. Three cases showed a positive status thymicus with questionable status lymphaticus, and two positive status lymphaticus with questionable status thymicus. Therefore there is relationship, not only between tetanus and status lymphaticus, as was assumed by Weichselbaum, but also between tetanus and status thymicus, and between tetanus and status thymicolymphaticus. Persons with these anomalies, especially status thymicolymphaticus, are more apt to succumb to tetanus than persons with normal constitution. Constitutional anomalies of the type of pure status hypoplasticus are of no influence upon the mortality of tetanus. In 4 lung cases, bronchopneumonia due to various causes was found in six. A specific infection seemed improbable.

The fact that enlargement of the spleen was found in about 4 per cent of the cases suggested mixed infection.

Eighty-five of the histories reviewed gave the cause of death. Twenty deaths were due to complicated bronchopneumonia (Pnebram) and

thirty-six to heart failure (congested organs without hemorrhages, edema of the lung). Very frequently congestion of the brain and an increase of the cerebrospinal fluid were found. In only four cases could sepsis be regarded as the cause of death.

Hemorrhages in the muscles were found most frequently in the rectus and psoas muscles where they were usually associated with wax degeneration. Seven docardial hemorrhages were discovered rarely contrary to Ribbert's findings. It appeared that the wax degeneration had preceded the hemorrhage. Without doubt, pressure was a factor in the degeneration.

Gas distention of the intestines, which Moenckberg regarded as characteristic of tetanus, was not observed in the majority of cases. Neither were thyroid changes conspicuous.

With regard to the type of missile, the author states that shell and mine splinters are particularly dangerous because they carry particles of dirt and clothing into the wound. Least dangerous are smooth, penetrating gunshot wounds. Shrapnel wounds come between these two types.

Mixed infections are of great importance. The manner in which the gas and tetanus bacilli influence each other is not known. It is surprising that bacteria which are carried into the brain, the spine, the breast or the abdominal cavity are seldom cause of tetanus. In such cases it is probable that the toxins are rendered harmless in the injured part, tissue or in the excretions.

The six cases of late tetanus in the series suggested the presence of a latent infection and required more extensive serum treatment. As the injected antitoxin remains active for only fourteen days, Aschhoff and Robertson claim that a second injection should be made eight days after the injury. When it is used methodically tetanus antitoxin will prevent early as well as late tetanus with a reliability that borders on certainty.

KREUTER (Z.)

Baellie, A. Combination Treatment of Tetanus (Kombinationsbehandlung des Tetanus). *Ztschr. f. gerichtl. Fortbild.* 9, 212, 427.

The author reports two cases and discusses the modern treatment of tetanus. Although tetanus serum is an excellent prophylactic, there is as yet no specific remedy for tetanus when once it has appeared. In the severe forms, various remedies are combined, according to the symptoms. The author lists three on five points.

The neutralization of the tetanus formed in the body before they attack the ganglion cells in the brain and cord. This is best done by a six day series of intravenous injections of serum. Further doses may be harmful and will be of no benefit. If the incubation period has been very short, a single intramuscular injection of 10 to 20 c.c.m. may be given and the rest administered intravenously or intramuscularly within the next few days. If there is any considerable increase in the symptoms, the serum treatment should be stopped.

Local surgical removal of the infectious organisms. This should be done by incision followed by painting with tincture of iodine. The wound should be left open.

3. The alleviation of the spasms and the general reflex excitability. For this purpose magnesium sulphate is best. This is a powerful poison which acts on the heart. As a 50 per cent subcutaneous injection (5 to 10 cc m) is dangerous, an equivalent quantity should be given as a 5 per cent intravenous injection only in case of necessity. The effect lasts for from one-half to one hour. In acute arrest of the heart action from an overdose 5 per cent calcium chloral (at the most 1 cc m) should be administered intravenously. When the magnesium sulphate no longer suffices to combat the spasms, slow chloroform narcosis should be used. To avoid the continuous use of magnesium sulphate during the long duration of the spasms (thirteen days) Barceili recommended injections of carbolic acid. The author has given subcutaneous injections of 50 cc m of a 5 per cent solution even twice daily without observing any general or local injury.

4. Rest. Sleep should be induced in the daytime by means of 0.02 gm of morphine and 0.2 of pentopon and 1 night by one or 2 doses of 1 or 2 gm of chloral hydrate given by rectum.

5. General treatment. As heart stimulant camphor is effective. A liquid diet should be given and the bowels kept open by the administration of senna leaves and glycerine injections. Irrigations are to be avoided as they cause spasm of the abdominal muscles. B. W. (L)

ANÆSTHESIA

Hewer C. L. The Effects of Vagal Trauma on the Anæsthetized Patient. *Proc Roy Soc Med* Lond. 9 4, xvi Sect Anæst. 7

The author describes four cases in which various kinds of direct trauma to the vagus nerve either the right or the left, caused the sudden collapse of the anesthetized patient. In three cases death resulted.

The heart stoppage occurs in diastole as the apical fibers are distributed only to the sino-auricular nodes and atricles. After prolonged vagal stimulation the heart may begin beating slowly in condition called vagal escape and does not the independent contraction of the atricles. This phenomenon

apparently occurred in the one patient who is covered.

Reflex vagal stimulation, as chloroform anaesthesia, may lead to results similar to those seen after direct stimulation.

From these facts it is evident that especial care is necessary in operating near the vagus, the symptoms dependent upon injury to this nerve must be recognized promptly and the cause of the trauma must be removed immediately.

G. R. McArthur M.D.

Rees, E. F. Ethyl Chloride as an Anæsthetic for Minor Operations on Children. *Lancet*, 1909, civ. 58

On the basis of experience in 5,000 dental cases the majority of children, the author regards ethyl chloride given with the closed method as the best minor anæsthetic because of its safety, the ease with which it can be administered, the reasonable duration of the anaesthesia it induces, the fact that the anaesthesia is induced rapidly, and the rapid recovery from effects of the anæsthetic.

G. R. McArthur M.D.

Kutchna-Lieberg, E. Experiences with Splanchnic Anæsthesia (Erfahrungen mit der Splanchnicæ anæsthesie). *Arch für Klinisch* 9 1, xxvii, 276

Following critical review of his cases, the author summarizes his views on splanchnic anaesthesia as follows.

With the proper technique splanchnic anaesthesia very seldom fails, but even under such circumstances complete analgesia is not always obtained. There seems to be more danger associated with the injection of anaesthetics into the splanchnic region than into other regions. Too rapid absorption with consequent intoxication, occasional prompt collapse, and sometimes late conditions such as tony of the stomach and intestines may result. Atropia seems to render these complications less frequent. Persons in whom the equilibrium between the splanchnic and vagus is unstable are especially endangered in splanchnic anaesthesia.

The use of splanchnic anaesthesia as routine procedure will depend less on the technique of injection than on the choice of anaesthetic for particular purpose and the possibility of preventing marked disturbances in the splanchnic and vagus equilibrium. Salzer (L)

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Rosenfeld, K. Practical Roentgen Spectrometry and Its Physical Basis. *Am J Roentgenol* 9 3, 7, 479

The qualimetry of roentgen rays (the determination of their hardness, their power of penetration, and the length of the waves) must form the basis of every practical use of the rays in general and for the dosimetry of roentgen therapy in particular. The methods used up to the present gave only an approximate estimate of the wave lengths of the radiation.

A new system can be built up only by means of the method of ray analysis made use of by physics. To this end the author with March and Frits, sought to make possible a direct insight into the roentgen spectrum and to perfect a method which might be adapted to the conditions of radiological practice and its simple resources. Simplicity, speed, and accuracy are essential. A single quantity which would be able to characterize with sufficient accuracy the polychrome complex of the radiations had to be found for every spectrum, corresponding to radiation. In other words, it was necessary to find a key which would serve in practice as a simple term for each radiation. The final problem was the utilization of this key in practice.

This article gives a short résumé of the results of the physical experiments as they appeared to the author and his co-workers at the beginning of their research or were supplemented during the course of their work. Most of it, however, is an explanation of their spectrometric method of analysis and a description of their spectrometer and its use.

The new process has already led to a far reaching uniformity and simplification of roentgenological methods. It is, and apparently will be, of importance for all branches of radiology. However, there will be no lack of objections to it. Especially at the beginning the objection may be raised that the discharge of the tension curve, which so far has been regarded of such great importance for the quality of the produced radiation in the different types of apparatus, cannot remain without considerable influence on the relative composition of each radiation and therefore on the curve of the spectrum.

It is true that other forms of the tension curve belong to the different types of tubes, the ion tubes on the one hand and the Libenfeld and Conbridge tubes on the other, since with the ion-tubes it has to do with the appearance of an explosion tension which is absent in the electron-tubes. Therefore on account of the different discharges of tension for these types of tubes, the necessity of separately

ascertaining the quantitative working power for each with regard to the emitted radiation has already developed. It has been shown, however, that even for these types the quality of the radiation, that is, the form of the curve of the spectrum is not obviously different. On the other hand, the results of testing gained up to the present time and the theoretical calculations by March have shown that an influence of the current tension curve on the distribution of intensity such as has been ascribed to the different types of apparatus, is not due to them or is due to them in such slight degree as to be negligible in the practical utilization of the radiations.

ABRAHAM HARTUNG, M.D.

Simons, A. An Experimental Contribution on the Problem of the Growth-Stimulating Effect of the Roentgen Rays on Normal Human Tissues. (*Experimenteller Beitrag zum Problem der ausstrahlungsbewirkten Wirkung der Röntgenstrahlen auf normales menschliches Gewebe*) *Fortschr d Geb d Roentgenstrahlen* 9 3, XXX, 300

Simons proved that small doses of the roentgen-ray may stimulate the growth of normal human tissue by treating two of his finger nails with from one third to one-sixth of an erythema dose and then comparing them with the corresponding finger nails which were not radiated. Even at the end of the first week the radiated nails were about 35 mm longer than the others. On further irradiation their growth was still further stimulated. GRAHAM (7)

Jenkinson, F. L. X Ray Treatment of Tumors. *J Radiol* 9 3 14, 29

This article is based upon a series of 300 cases of malignant tumors. The series include early and late stage tumors and tumors situated in almost every part of the body. They were all treated during a period of eleven months. A voltage of 300,000 was used. The patients were admitted to the hospital twenty-four hours in advance and subjected to a complete physical examination, including a blood study.

The routine was a cleansing enema the night before the treatment, no food during the preceding six hours, and no solid food the three hours immediately after the treatment. One dram of sodium bicarbonate in a glass of water was given three times daily during the course of the treatment. The latter usually consumed a week. By this prolongation of the course the systemic reaction was lessened. The depth and relation of the lesion was carefully studied and an effort made to avoid radiating normal structures any more than necessary.

The author has noted improvement in patients with spinal metastasis secondary to carcinomas of the

breast, but be regards pulmonary metastasis from breast cancer as unresponsive to radiation. In cases of pulmonary metastases secondary to sarcoma temporary relief can be given.

Of the three patients with gastric cancer who were treated, two reacted very well. In the case of the third the treatment was discontinued because of the severity of the systemic reaction. The results in carcinoma of the bladder were uniformly good but word of caution is added regarding the use of instruments or instillations within the bladder during the course of the treatments.

In cases of breast cancer it was found advisable to return to medium voltages because the greater penetration obtained with the higher voltages is not suitable for these superficial lesions unless some artificial media is molded upon the breast to convert the cancer into a deep lesion.

In malignant tumors of the mediastinum, pancreas, bone, soft tissues (sarcoma) and pituitary the best results have been only fair.

The results are summarized briefly as follows:

The blood count remained practically normal in the majority of cases.

Examination of the stool showed blood in only five of the abdominal cases.

Diarrhea appeared in only a few cases.

Malignancy makes it impossible to give definite prognosis. CHARLES H. HEACOCK, M.D.

Pickard, H. Roentgen Absorption in the Blood and Extracorporeal Irradiation of the Circulation in the Treatment of Cancer (Ueber Röntgenabsorption im Blut und extrakorporale Kreislaufbestrahlung zur Therapie des Krebses). *Strahlentherapie* 9:22, 277-287.

The technique of X-ray treatment of malignant tumors used to date is based upon the assumption that the tumor cells are peculiarly sensitive to the rays. On the other hand, the theory has been brought forward that the chemical changes are merely initiated by the rays and require for their completion all the fermentative and vital processes of the cells during the period of latency. This transformation of energy in the body is closely bound up with the absorption of the rays. The greater the absorption, the more powerful the effect.

Since the absorption of the roentgen rays increases with the height of the ordinal number of an element, the iron of the hemoglobin is particularly suitable as an absorptive element and transformer of radiant energy. In addition, iron must be particularly effective biologically as it itself emits soft rays. This suggests that, instead of the tumor, the blood might be used for storing up roentgen energy. Accordingly many roentgenologists render the tumor and the surrounding tissues actively hyperemic by means of diathermy, injections of blood and blood transfusion.

The author attempted to irradiate the blood outside the body by conducting it from the radial artery through glass tube into the ulnar vein and exposing the tube with the blood passing through it to the

roentgen rays. Experiments on dogs failed because of the narrowness of the lumen of the vessels. When the harmlessness of the injection of rayed citrated blood into the circulation of rabbits had been demonstrated, the extracorporeal circulation described was established in the case of a cachectic woman suffering from an inoperable recurrence of carcinoma of the breast with metastases in the glands. The length of time during which it was possible to expose the blood to the rays was only sixteen minutes because by the end of this time coagulation occurred in the glass tube. A positive result was not obtained as the patient died eight hours after the procedure. Further attempts have not been made because of the lack of suitable cases. HANSEN (2)

Pfahler, G. E. Measurements on T. American Deep-Therapy Machines, with Special Reference to the Duane Method. *J. Radiol.* 9:2, 277-287.

The Duane method consists in measuring the fraction of radiation that passes through given thickness of filter by means of an ionization chamber. The latter is standardized by means of a standard galvanometer in terms of electrostatic units of radiation. This unit is that amount of radiation which will ionize each cubic centimeter of air in the X-ray beam so that it will permit the passage of the quantity of electricity which will raise a sphere of radius of 1 cm to the unit of potential 300 volts. Small "a" expresses one electrostatic unit of charge and large "E" their number. E multiplied by the number of seconds equals the corresponding number of small "e."

When Duane's method is used, the presence of leakage is first determined and then by means of standard cell the reading that corresponds to one electrostatic unit of radiation is ascertained. Then the ionization chamber is placed in the path of the X-rays and another reading is obtained. B using this reading as the numerator and that made with the standard cell as the denominator, fraction is obtained that represents E , the number of electrostatic units of radiation.

The wave length is determined in practical work by placing the ionization chamber about 1 cm beyond the filter and making a reading. Then second filter of his thickness is added and second reading is made. The second reading divided by the first gives fraction. This is reduced to percentage and the wave length is obtained by Duane's chart.

By this method the output of two deep therapy machines was measured. Although conditions were about the same on one machine as from 20 to 30 per cent less efficient than the other. From the behavior of the tube in the case of the less efficient machine Pfahler felt certain that the radiation could be brought up to an equal aim by increasing either the voltage or the milliamperage. These facts illustrate the fallacy of speaking only of output milliamperage, etc. to denote dosage.

CHARLES H. HEACOCK, M.D.

Geithardt, P. P. The Roentgen Ray Ulcer and Its Treatment (Das Röntgengeschwür und seine Behandlung) *Fortschr. d. Geb. d. Röntgenstrahlen*, 9, 2, XXX, 746

The author reports four cases of extensive X-ray lesions which healed slowly and only after the use of various remedies. There were two cases of burn due to the soft rays and two of injury due to the hard rays.

The thorough research of Roet has shown that in the skin the first structures injured are the cells of the basement layer and the newer layers of the prickle-cell layer. Therefore the matrix of the skin from which regeneration proceeds is excluded. The changes in the other layers are to be regarded as sequelae.

The choice of treatment must depend upon the stage of development of the ulcer. When an X-ray ulcer is produced by a single overdose of the rays, it develops after a period of latency of from two to five weeks and is usually preceded by an erythema. When it is caused by an overdose given in multiple treatments repeated at short intervals, the irritation accumulates but there is no early erythema to announce the coming ulceration and the lesion does not appear until after a period of months or years. There is a progressive injury to the blood vessels which at first causes no symptoms, but reduces the nutrition of the tissues to the minimum. The ulcer then develops when the nutrition is still further reduced by pressure from clothing, the changes of old age, or other influences.

The chief symptom and the first treatment in cases of ulcer is pain. Cocaine, adrenalin, and preparations of orthoform are contraindicated as they cause further constriction of the blood vessels. As direct treatment, surgery is best when it is technically possible. If the use of medical remedies the principle to be followed is the less the irritation the better. For moistening bandages, solutions of boric acid and peroxide of hydrogen are good. As no

irritating salves, boric and zinc salves are recommended. To stimulate granulation, black, red, and gray salves are of value. Of physical methods, those which cause hyperemia are best. The quartz lamp has proved particularly beneficial at first short general irradiation should be given and later local irradiations in addition. Radium in the form of radium mud has also been found of value.

KOCK (Z)

MISCELLANEOUS

Kovacs, R. Th. Physiotherapy Clinic—A Necessity of the Modern Hospital. *N. York M. J. & Med. Rec.* 9, 3, cvviii.

The importance of physiotherapy to the modern hospital was proved by the fact that during the war 3 per cent more men were returned to service from hospitals which employed physiotherapeutic measures than from the others.

The combined use of surgery and physiotherapeutic measures shortens the period of disability and in many cases saves the patient from becoming a cripple.

The equipment for modern physiotherapy clinics should include all the recognized modalities such as electrotherapy, static high frequency galvanic, faradic, and sinusoidal currents, the X-ray massage, therapeutic exercises, light therapy baths, etc.

Success depends upon full equipment and trained staff. The director should be a physician trained in physiotherapy.

The value of physiotherapeutic measures in cases of old fractures is beyond dispute. Hydrotherapy and massage with diathermy play an important part in successful treatment. Scoliosis, flat foot, and other deformities demand physiotherapeutic measures. The therapeutic value of electricity in nerve injuries cannot be measured. Cases of osteomyelitis are benefited by lamp therapy after surgery.

JOHN MITCHELL, M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

F; O J. Early and Late Lesions Due to Electric Injuries. *J. Am. Med. Soc.* 43: 220, 20

The author makes a distinction between electric injuries in which the contact is instantly established without the formation of a spark gap, and electric burns caused by the presence of a spark gap.

Contact should be broken immediately the rescuer first assuring himself of his own safety. Rubber gloves, or even dry cloth or dry board, may be used in breaking the contact. The rescuer should not touch the victim's bare skin.

Emergency treatment should not be delayed for a physician's arrival. The first few minutes are worth hours of attention later on.

The victim should be laid flat on his back with his head raised on a pillow never lowered, and with his chest bared.

Artificial respiration and attempts to restore heart action should be begun at once. Stimulants should not be given by mouth until natural breathing is resumed.

All local injuries with the exception of gross hemorrhage should be ignored until the general symptoms have subsided. A cold emesis, the application of hot and cold water alternately to the chest, the subcutaneous or intra epineurial administration of camphorated oil or adrenalin, excoriation, chloroform inhalations or spinal puncture may be of benefit.

Electric burns should be treated like other burns. The resulting scar is usually less marked.

Electrocution causes the greatest damage to the nerves and blood vessels, the injury to the latter sometimes resulting in gangrene. Amputation should not be done until a definite line of demarcation has developed.

The late effects are confined largely to the nervous system, but the prognosis is good even in cases with epileptiform attacks. Neuroses sometimes supervene and must be treated.

MARCELL H. KRAMER, M.D.

Farr C. F. Ischemic Fat Necrosis. *Ann. Surg.* 91: 11, 1

The author reports six cases of ischemic fat necrosis and discusses the question of its diagnosis. He states that about dozen other cases have been observed during the past several years. It was not for the condition was of recent origin and had severe trauma. The subjects were all young and robust. The tumors remained for as long as three months and then gradually disappeared or the patient no longer

returned for observation. In three of the active symptoms, operative intervention was deemed unnecessary.

Subcutaneous fat necrosis is of little importance in itself as its end results are either complete resolution or the formation of fibrous, fatty and calcareous cysts. It is of interest chiefly from the point of view of differential diagnosis. The relation of traumatic fat necrosis to peripheral fat necrosis, cyst formation and possibly to true tumor is a matter of investigation.

It has been found comparatively easy to cause ischemic fat necrosis in animals. Therefore, severe injury is not necessary for its development. Possibly no ferment action is concerned, it is a local factor being simply ischemic.

Bierlich, R. Experimental Tumor Cancer As Attempt to Determine the Character and Action of the Cancer Forming Factors. (After the experimental Tumor Tissue in Various Animals and Wistar's case of the histological factors in the tumor.) *Arch. Path. & Bact.* 5: 1, 11

The cancer forming action of fat is determined by its simultaneous and regular reaction with the protoplasm of the epithelial and adjacent connective tissue. The new properties which then pass on the direct function of the changed structure of the protoplasmic system.

In research on the cancer forming action of fat on the skin of white mice it is found that the reaction is not limited to the site of local application on the epidermis, but that the active constituents penetrate the adjacent connective tissue and are ultimately taken up by the blood stream and carried to the kidneys.

The tissues chiefly concerned in the cancer formation are the epithelium and adjacent connective tissue. One of these tissues of reaction can be demonstrated. The epidermis is first hypertrophied and then atrophy (as it is true in physiological growth). It is at this stage in the downward growth of the epidermis that there is first a change of the cells of the ground substance in marked increase of the cellular and connective tissue which is followed by the connective tissue in general and the epithelium. A part of this penetration occurs the connective tissue comes from the epidermis and the latter cells and the most cells disappear. The epidermis is not affected.

The first stage of the reaction in the epidermis shows an increase of the cells of the epidermis. Injection of cancer cells into the epidermis of the animal is the cause of the reaction. If the first stage is the reaction in the connective tissue

is increased by arsenic, the cancer formation is arrested. Hence this reaction appears to determine the outcome of the cancer formation. Trower (2)

Nather K., and Orator, V. Refractometric Serum Investigations on Carcinoma and Predisposition thereto (Refraktometrische Serumuntersuchungen über Krebskrankheit und Disposition). *Wid. d. Georg. d. Med. Chir. 9* xxxv 6

Freundhammer and Neuberg discovered that a specific reaction takes place between the blood serum and isolated carcinoma cells. While it is still impossible to demonstrate this exactly with such certainty that it can be of use to the practicing physician it throws light on certain biological processes. The question arises whether the reaction is a consequence or an important cause of the cancerous affection. In cases of carcinoma the blood serum is unable to dissolve or to disintegrate isolated carcinoma cells.

In addition to the serum obtained from cases of cancer the authors also used the serum of sixty-three persons who were free from cancer. The subjects were divided into two groups, those under and those over 45 years of age. The most important finding of these examinations was that a considerable percentage of persons over 45 years of age have lost the power of disintegrating carcinoma cells, even when it is certain that no carcinoma has developed. Therefore the lack of specific power of disintegration is not a consequence of cancer. There must also be specific predisposition because the cell reaction remains positive after local removal of the cancer.

Kocor (2)

Frankel F. The Recognition of the Regional Recurrence of Carcinoma in the Skin (Zur Erkennung von Wiedererkrankungen in der Haut). *Zentralblatt f. Chir. 9* xlv 333

By careful excision of regional cutaneous recurrences after carcinoma of the breast the skin often becomes prolonged for years if the glands remain intact. The smallest nodules of recurrence can be recognized by growth arising from a few times the portion of skin that appears suspicious. By this irritation the nodules which cannot be palpated and can scarcely be seen are rendered visible and palpable. On excision only a small number of carcinoma cells will be found. The toxins of carcinoma cells present in the surrounding tissues form papules similar to those of urticaria.

Richter (1)

GENERAL BACTERIAL, MYCOTIC, AND PROTOZOAN INFECTIONS

Wiedemann H. The Statistics and Bacteriology of Gas Gangrene (Die Statistik und Bakteriologie des Gasbrandes). *Verhandl. d. Chir. Ges. Bonn* xlviii 131

The author reports upon 34 cases of gas gangrene, particularly the wounds of the lower extremities which were treated in the period from 1900 to 1908.

In 10 cases the heart blood continued to gas even a few hours after death, and because of the hemolytic action of the gas bacillus, remained fluid for a long time. The internal organs and the vascular system appeared to become rapidly infiltrated with blood. The central nervous system showed nothing characteristic, and in the lungs the chief condition was edema. The findings in the kidneys and suprarenals were not constant.

The disease begins usually in an injury to the muscles and spreads by way of the subcutaneous tissues and the loose sheaths of the nerves and blood vessels. Enlargement of the spleen which is usually not present indicates a toxemia. The exciting organisms are the *Clostridium Welchii* bacilli and equally often bacilli of the symptomatic anthrax group (Type B) and the group causing malignant edema (Type C). The Type B infection runs the most unfavorable course.

The cases may be differentiated into blue and brown according to the color of the cutaneous edema. The blue cases result from infection of Types B and C and the brown from infection of Type A. Worthy of note in the brown cases are the severe edema of the skin, the beer-brown color of the subcutis and the relative freedom from involvement of the true skin. In the blue cases the chief characteristics are the intense involvement of the cutis, the marked hemolytic color of the edema and the direct condition of the striated musculature. All forms show three stages: edema, gas production and necrotic breaking down. Tonnies (1)

Ruge, C. The Determination of the Virulence of Streptococci (Virulenzbestimmung der Streptokokken). *Med. Klin. 9* 3 200

The methods used heretofore to determine the virulence of streptococci are either complicated or unreliable. The author recommends the following simple procedure:

A quantity of the cocci infected material which can be taken up on two or three platinum loops is added to 10 c.c. of fresh obtained defibrinated blood and one loop of this mixture is spread out upon a non-sterile slide. The visible colonies sometimes disappear or do not show any growth until after from 100 to eight hours. In such cases the bacteria are not virulent. If a growth is noticed within the first three hours the virulence of the cocci is high and the prognosis is poor.

In the cases of gynecological and obstetrical conditions in which vaginal smear is tested by the author in this manner the method failed only twice.

Worms and Fish (2)

DUCTLESS GLANDS

Clark, A. J. The Experiment of Ductless Gland Therapy. *Bull. M. J.* 9 4 5

Ductless gland therapy may be defined as the application of the use of the secretions of the glandular system as pharmacological agents. Examples of the latter are the

tary extract and adrenals. In the matter of substitution therapy the conditions laid down by Gley for the determination of the secretion of an organ have been found too severe. The author suggests the following criteria for substitution therapy:

1. The destruction of the gland must produce a characteristic syndrome.

2. The administration of a extract of the organ must relieve the symptoms.

3. It must be possible to identify and measure the extract by pharmacological tests.

The production of the active extract of an endocrine gland may fail however because the gland may not only secrete but also store its extract as rapidly as it is formed leaving none stored within it or because the principle may be so labile that it cannot be isolated. Under such circumstances the grafting of a gland may relieve the symptoms when the administration of the gland extract gives no results.

There are nine glands whose deficiency produces characteristic symptoms, namely the thyroid, the parathyroid, the islet tissue of the pancreas, the testicles, the ovaries, the suprarenal cortex and medulla and the anterior and posterior lobe of the pituitary gland. In the case of the thyroid gland the evidence is fairly complete; deficiency can be relieved by the administration of the extract and the latter can be identified as a formula of activity. This is true also of the extract of the islet tissue of the pancreas but in the case of the other glands there is no evidence to show that the administration of the organ extract relieves the deficiency. However the active extract of the pituitary and the suprarenal gland to some extent that of the parathyroid glands can be used as therapeutic agents in cases other than deficiency conditions which may both get done by substitution therapy. The deficiency of the oral administration of the phenylglutamate is obvious as only few of them have a definite known action or can be assayed test from the terminal tract.

W. LAMM J. DICKSTEIN M.D.

EXPERIMENTAL SURGERY

HARRIS, S. I. A Study of the Viability of Bone After Removal from the Body. *Arch Surg* 93

The author reports series of twenty experiments on ten dogs. The method used was as follows:

Under ether anesthesia and with aseptic technique the entire metatarsal bone was removed from the animal foot. One bone fragment fractured in the center was placed in a sterile bottle and

kept at room temperature, while the other, after being broken up as placed in a bottle of physiological sodium chloride solution and kept at a temperature of 30 degrees C. At the end of periods varying from two and one half to twenty four hours the fragments were united with catgut and the two sets of bones buried in the muscles on opposite sides of the back of the same animal. The fragments were left in the muscle from forty four to sixty-one days.

An effort was made to determine the viability of the cells after exposure to such conditions as are present in the operating room. In ten of the twenty experiments the period of observation was less than fifteen days because the animal died. These experiments were therefore unsatisfactory so that as two questions regarding the ultimate results are concerned. The high mortality of 50 per cent as compared with the mortality of 1 per cent which is usually associated with transplantation experiments suggests that the character of the experiments as responsible for the poor results. The chance of infection is of course greater when the bone is allowed to remain outside the body for considerable period of time before transplantation. It is possible also that in the presence of at least partially degenerated bone the virulence of the bacteria was increased and that the changed proteins of the exposed bone exerted toxic action after the bone as replaced in the animal.

There were ten experiments in which union occurred three in which callus as formed about the fractured ends and in which signs of living bone were noted on histologic examination. The results did not appear to be any better than physiological sodium chloride solution at 30 degrees C. was used when the bones were placed in a sterile bottle at room temperature. The longest period during which signs of living bone were demonstrated was sixteen hours for both methods.

The author's conclusions are as follows:

The osteoblastic cells of bone all survive an exposure period of nineteen hours in air at room temperature.

There is sufficient active retained ability in the exposed cells to form callus and in some instances for union of the fractured bone after its transplantation into the muscles of the same animal independent of any other source of osteogenic elements.

The demonstration of the viability of the cells of bone after removal from the host adds incontrovertible evidence that the osteoblastic cells of bone graft play an independent active role in the processes of regeneration.

CARL D. VICKENBOLD M.D.

BIBLIOGRAPHY of CURRENT LITERATURE

NOTE.—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF REFERENCE INDICATE THE PAGE THIS ARTICLE REFERRED TO IN A BOLD FACE

SURGERY OF THE HEAD AND NECK

Head

- Traumatic lesions of the head T A SHALLOV Ann Surg 923 lxviii, 26
Intermittent blindness after skull injury C A HIGDON Wenschen and Wenschen 93 lxv, 90
Chronic retention of parotid saliva—repeated parotitis G LUDWIG Presse méd Par 93 xxxi, 595
Pyogenic infection of the parotid glands and ducts V P BLAIR and E C PADGETT Arch Surg 93 vi [427]
Combination of X ray and radium therapy in the treatment of superficial malignancies of the face S D NICK J Oklahoma State M Ass 923 xvi,
Malignant disease of the upper jaw with special reference to operative technique E M WOODMAN Brit J Surg 923 li, 53 [428]
Mandibular cysts of dental origin P G BORTOLLOTT Riforma med 93, xxxiii, 650
The wiring method of treatment for fractures of the mandible E H TIDMAN U S N val M Bull 93 xix, 38
Complete necrosis of the lower jaw and extrusion through the skin P BERTILLA Boll et mém Soc de chir de Par 93 xlix, 943
The rebuilding of the alveolar processes by bone transplantation Z HENRIKSEN Dental Cosmos, 93, lvi [429]
796

Ey

- Neurotic disturbances of eye function L K LUNT and A F RIGGS Arch Ophth 923, li, 33
An account of an experiment on vision after sensation in reference to illumination in coal mines carried out by the National Institute of Industrial Psychology E FARRER Brit J Ophth 923, vi, 348
The cause and prevention of myopia F W EMMETT Quaker Med Press 93 cxvi, 8
The method of "commodiousness" and the significance of bilateral diplopia M MARQUEL Prog de la clin Mé dml, 1923 xiv, 580
A case of enophthalmos probably caused by non sup purative ca crotic sinus thrombosis J P WENNER Proc Roy Soc Med Lond 93 xvi Clin Sect 4 [429]
A new operation for ptosis J R PROLAN Med Herald, 93 cli, 94
Unilateral hysterical blepharospasm cured by suggestion V M AM Seglo méd 93 lxx 650
A further note on blepharochelasia J S FRIEDENWALD Arch Ophth 923, li, 567
Chalazion cure for removal of meibomian cyst J M THOMSON Am J Ophth 93, 13 vi 584
A painless chalazion operation W T D Ann J Ophth 923, 3 vi 583

- The treatment of congenital dacryocystitis L W CARKLER J Am M Ass 923 lxxx, 3
Purulent and amicrobic pseudomembranous conjunctivitis GALINDO Med Ibera, 923, ii, 570
Vaccinae treatment of vernal conjunctivitis J F TOMMASINO South M J, 93, xvi, 555
The nourishment of the corneal epithelium C F CHARLTON Am J Ophth 923, 3 vi, 556
Two cases of primary band shaped opacity of both cornea A C HUDNO Proc Roy Soc Med Lond 93, xvi, Sect Ophth 3
Complete bilateral adopathic keratitis H DE GOUVERA Brual med 93 xxxvii,
Methylene blue as stain for ulcers and abrasions of the cornea A G FOER and W J KATZ J Am M Ass 93, lxxx, 399
The effects of drugs upon regeneration of the corneal epithelium L POST Am J Ophth 923, 3 vi, 559
A case of ulra and one of corneal ulcer cured by tonollectomy R M NELSON J Am M Ass 93, lxxx,
Pseudo glioma vascular tumor of the lens S R GIFFORD and J S LATTI Am J Ophth 93, 3 vi 565 [430]
Lens injury without resulting cataract C L LARUZ Am J Ophth 923, 3 vi, 588
Cataract of both eyes and with con urgent strabismus of the right of congenital origin M M AMAR Seglo méd 923 lxx, 63
Complete congenital cataract, bilateral W E SCAR MONODON Am J Ophth 923, 3 vi, 583
A series of 60 cases of cataract removed under sub conjunctival bridge C WELLS Brit J Ophth 923, vi 320
The treatment of prolapse of the iris following cataract extraction H T HAMMILL Am J Ophth 923, 3 vi, 580
A case of subhyaloid hemorrhage in girl M S MAYOR Proc Roy Soc Med Lond 93, xvi, Sect Ophth 3
The embryology of Tenon capsule I GOLDSTEIN Arch Ophth 93, li, 327
Serous tenositis complicated by bilateral papilloedema G N BRAZEAU Arch Ophth 923, li, 355
Orbital cellulitis as related to nasal anastomosis R RIBAS VALERO Rev méd d Sevilla, 923, xlii, [430]
Endotheliosis of the orbit F A WILLIAMSON N KIL Proc Roy Soc Med Lond 923 xvi, Sect Ophth 35
Neuroretinitis resembling retinitis pigmentosa due to congenital syphilis A C LEWIS Am J Ophth 923, 3 vi 585
Familial retino-cerebral degeneration W H NARDIN and R B CHAMBERLAIN Am J Ophth 923, 3 vi, 476 [430]
Atrophic patches of the macula, tuberculous cyst? F A WILLIAMSON N KIL Proc Roy Soc Med Lond 923 xvi, Sect Ophth 3

- Roux for irreducible tuberculous with detachment of the retina in 1 kitten. J B L WOOD and H N. Brit J Ophthalm 9 3, 2, 305
- Pyophilic, with focal infection. L. I. APPER. Am J Ophthalm 9 3 3, 2, 363 [431]
- Opaque nerve fibers. M. L. LEVINE. Am J Ophthalm 9 3 3, 2, 37
- Diseases of the optic nerve and its relations to the posterior nasal cavities: report of four cases showing the uncertainty of the diagnosis. C. W. CUTLER. Arch Ophthalm 9 3 3, 2, 33 [431]
- Optic neuritis of sphenoidal sinus origin, operation. cure. A. C. THORNTON. Brit M J 9 3 3, 2, 35 [431]
- Tumors of the optic nerve. H. NEARKE. Proc Roy Soc Med Lond 9 3, 2, 3, Sect Ophthalm 34
- Concerning the surgical treatment of gliomas, with special reference to modified Frost-La Grange technique. D. T. VALE. Arch Ophthalm 9 3 3, 2, 346 [431]
- The physiological effects of radiant energy especially upon the human eye. C. BERKARD. N York State J M 9 3 3, 2, 30
- Ophthalmic spectra of focal infection. J. A. F. vs Med Times, 9 3 3, 2, 37
- The pathogenesis of the ocular lesions produced by deficiency of Vitamin A. A. M. YUDOVY and R. A. LAMBERT. J Exper Med 9 3, 2, 3, 300, 7
- Changes in the para-ocular glands accompanying the ocular lesions which result from deficiency of Vitamin A. R. A. LAMBERT and A. M. YUDOVY. J Exper Med 9 3, 2, 3, 300, 5
- Herpes zoster ophthalmicus. S. LONG and W. O. LINDSEY. Brit M J 9 3 3, 2, 304 [431]
- Optic atrophy after herpes ophthalmicus. L. P. ROY. Proc Roy Soc Med Lond 9 3, 2, 3, Sect Ophthalm 37
- Lepus vulgaris with ocular extension. W. S. FRA. M J 9 3, 2, 3, 300, 7
- Cases of ophthalmological interest from the pasteurization records of St George's Hospital London. 841-971. Brit J Ophthalm 9 3 3, 2, 3

EAR

- Foundations of otology the work of FLEMMING. W. J. C. NORTON. J Laryngol & Otol 9 3, 2, 3, 334
- A review of the auricle. V. TANTURANT. Acta otoleptica 9 3 3, 2, 3
- A case of total deafness and aphasia following severe shock. R. FRANKS. Med J Australia, 9 3
- A case of complete deafness dating from fall. J. DENIS. Gt Br Proc Roy Soc Med Lond 9 3, 2, 3, Sect Otol 47
- A case of deafness greatly increased after fall. J. DENIS. Gt Br Proc Roy Soc Med Lond 9 3, 2, 3, Sect Otol 48
- A case of long-standing deafness attributable to falls on the head improved. J. DENIS. Gt Br Proc Roy Soc Med Lond 9 3, 2, 3, Sect Otol 49
- A new and simple method of detecting feigned unilateral deafness. W. A. WELLS. J Am M Ass 9 3 3, 2, 3, 300
- Otitis deformans and otosclerosis. O. J. JENNINGS. J Laryngol & Otol 9 3 3, 2, 3, 344
- Section in the treatment of septic ears. W. STUART. Low. Brit M J 9 3 3, 2, 3
- Otitis media complicating operations on the paranasal sinuses. H. R. L. O'NEILL. Ann Otol Rhinol & Laryngol 9 3 3, 2, 3, 300, 47
- Otitis media mastoiditis and diseases of the nasal accessory sinuses as causative factors in malocclusion in children. T. H. O'NEILL. Ann Otol Rhinol & Laryngol 9 3 3, 2, 3, 300, 46 [432]

- The treatment of acute otitis media in children. T. B. LAYTON. B. J Child Dev 9 3, 2, 3, 35 [432]
- Otitis media and mastoiditis treated by radiant light and heat from electric lights. J. T. WOODS. N York M J & Med Rec 9 3 3, 2, 3, 300, 40
- Mastoidectomy from the standpoint of the pathology of early otitis media. A. M. ALDEN. J Missouri State M Ass, 9 3 3, 2, 3, 300 [432]
- Mastoidectomy with special reference to closure of the wound. S. S. W. TERRY. Kentucky M J 9 3 3, 2, 3, 347

NOSE

- Depressed nasal deformities: comparison of the post-operative alveoloplasty, bone, cartilage and ribbed with report of cases corrected with ribbed alveoloplasty by the author's method. J. D. LUTHER. Ann Otol Rhinol & Laryngol 9 3 3, 2, 3, 300, 33 [432]
- The treatment of nasal polyps. J. G. WARR. Am J Roentgenol 9 3 3, 2, 3, 379
- Obstruction of the nasal passages, with special reference to the upper regions. H. W. LUTHER. J Iowa State M Soc 9 3 3, 2, 3, 300, 7
- Headaches of sinus origin. E. D. ALLEN. Ohio State M J 9 3 3, 2, 3, 300, 33 [432]
- Mastoiditis of the frontal sinus. S. C. THORNTON and C. H. M. LUTHER. J Laryngol & Otol 9 3 3, 2, 3, 300, 36 [432]
- A radical frontal sinus operation. W. G. HOWARTH. J Laryngol & Otol 9 3 3, 2, 3, 300, 34 [432]
- Sarcoma of the ethmoid. A. R. MCKINNEY and F. D. WELLS. J Am M Ass 9 3 3, 2, 3, 300, 33 [432]
- Some further observations on the etiology and treatment of maxillary sinusitis. H. V. DICKSON. Ann Otol Rhinol & Laryngol 9 3 3, 2, 3, 300, 36 [432]
- Conservation in nasal surgery. W. W. POTTER. South M J 9 3 3, 2, 3, 300

MOUTH

- The surgery of harelip and cleft palate deformities. J. W. GOSNOLD. South M J 9 3 3, 2, 3, 300, 33 [432]
- Cleft palate. V. V. V. Bull et cetera Soc de chir de Par 9 3 3, 2, 3, 300, 33
- The technique of bandaging after cleft palate operation. G. RAY. Zentralbl f Chir 9 3 3, 2, 3, 300, 33
- A case of primary ulcerative tuberculous of the lip. R. RIVALLAN. Pichia Rome 9 3 3, 2, 3, 300, 33
- A simple technique of the lip: practical and basic pathological study. L. CRIVELLO. Rassegna medica e chir temp 9 3 3, 2, 3, 300, 33
- Radiation needles in cancer of the lip. G. RIVALLAN. Zentralbl f Chir 9 3 3, 2, 3, 300, 33
- Focal infection of dental origin and principles governing its removal. W. L. SIKES. Nebraska State M J 9 3 3, 2, 3, 300, 33
- A case of multiple dentigerous cysts. J. H. MURPHY. Proc Roy Soc Med Lond 9 3 3, 2, 3, 300, 33
- A case of multiple dentigerous cysts. B. GALLAGHER. Proc Roy Soc Med Lond 9 3 3, 2, 3, 300, 33
- Status of interrupted impacted and malposed teeth. J. L. ZIMMER. Internat J Orthodont Oral Surg & Radiography 9 3 3, 2, 3, 300, 33
- A histologic study of results obtained through intraoral treatment of prothoma. F. A. SWERTON. Califor M J 9 3 3, 2, 3, 300, 33
- A case of severe buccal stenosis. B. de V. vs Med Libera, 9 3 3, 2, 3, 300, 33
- Water-cure or gingivitis stenosis. J. W. C. vs CART. Am J Roentgenol 9 3 3, 2, 3, 300, 33

A case of lingual goiter K Uss Zentralbl f Chir 1923, 4, 701

Glossodynia with lingual tonsillitis as a etiology G. Sauer J Am M Ass 1923, lxxv, 5

Black tongue H Parry Dental Cosmos, 1923, lxxv, 69

An ulcerated ulcer on the tongue due to osium lacte L Williams and S Barker Jones Am J Dis Child 1923, xxvi, 77

Congenital carcinoma of the tongue L Baccarini Ann Ital di chir 1923, 405

Carcinoma of the floor of the mouth D Qures Am J Roentgenol 1923, x, 46 [424]

Dysphagia for malignant disease of the mouth, pharynx and nose, with notes on seventeen successful cases N P. Pritchard Brit M J 1923, ii, 56 [425]

Throat

Unhealthy tonsils associated with cervical adenitis W G Horwath and S R Glover Lancet, 1923, clvii, 702 [426]

Indications and technique of tonsillectomy A Morton Jour Press med Soc 1923, xxvi, 593

Complete tonsillectomy M Nimmerger Atlantic M J 1923, xxvi, 67

Involvement of the nervous system in malignant disease of the nasopharynx H W Wootton Med Clin N Am 1923, vii, 500

Lymphoepithelioma of the tonsils with cervical metastases W S Schmitt Ann Surg 1923, lxxviii, 1

A case of complete Jackson's syndrome A D Cawthorne Rassegna internaz di clin temp 1923, iv, 173

Nonrecurrence the importance of early laryngectomy E Watson-Williams Bristol M Chir J 1923, xl, 53

Late X-ray injuries of the larynx and suggestions for their prevention O Jaurigova Strahlentherapie, 1923, xv, 8

Neck

The nomenclature of diseased states caused by certain vascular structures in the neck J E Frazer Brit J Surg 1923, xi, 3

Anatomical surgical studies of the parathyroids the prophylaxis of postoperative tetany K Grassman Arch f klin Chir 1923, cxxvii, 176

Concerning thyroid form and function F Gould and V Orator Mitt d Grenzgeb d Med Chir 1923, xxvi, 401

Studies in thyroid disease B Bruckner Mitt d Grenzgeb d Med Chir 1923, xxvi, 405

A comparative study of the basal metabolism in normal men F G Benson Quart J Med 1923, xvi, 563

A permissible breakfast prior to basal metabolism measurements C G Bickerton and F G Bickerton Boston M & S J 1923, cxxviii, 849 [426]

Basal Metabolism, the value of its estimation H K. Moller Ann Clin Med 1923, 1, 39

Metabolic rate determinations in thyroid disease A. Sauer and F Bruckner Schweiz med Wchnsch 1923, lxx, 163

The Kottmann reaction for thyroid activity carbon dioxide the tested serum S Moritz and C M. Litzke J Lab & Clin Med 1923, viii, 60

Hypothyroidism related to other diseases F N. Walker Canadian Pract 1923, xlviii, 55

Hypothyroidism—studies of the metabolism and growth, and effect of thyroid treatment F B. Talbot Arch Pediat 1923, xl, 450

The treatment of goiter with iodine and the mercury-spor quartz light LAUGENACK Deutsche Ztschr f Chir 1923, 9, 343

The relation between thyrotoxicosis and tonsillar infection L E Brown Ann Otol Rhinol & Laryngol 1923, xxxii, 367 [426]

The indications for the surgical treatment and prophylaxis of goiter B Bruckner Wien klin Wchnsch 1923, xxvii, 3

Surgical indications in goiter R C Austin Ohio State M J 1923, xix, 557

The expediency of surgery over X-ray treatment of toxic goiter A G Bruckner South M & S 1923, lxxvii, 376

Surgery of the toxic thyroid L W Frank Kentucky M J 1923, xxi, 366 [427]

Observations on 93 consecutive days of the basal metabolism, food intake, pulse rate, and body weight in patient with exophthalmic goiter C C Strouss Arch Int Med 1923, xliii, 90

Exophthalmic goiter in childhood with some unusual manifestations H Haiman Arch Pediat 1923, xl, 403

A case of Graves (PARRY-Graves Basedow) disease in woman aged 69 a throat goiter E Strouss Proc Roy Soc Med Lond 1923, xvi, Clin Sect 44

Cardiac disorders accompanying exophthalmic goiter E P Boas J Am M Ass 1923, lxxx, 683 [427]

The heart in exophthalmic goiter and adenoma with hyperthyroidism, with notes on the pathology F A. Williams, W M. Boothby and L B. Wilson Med Clin N Am 1923, vii, 89

X-ray therapy in exophthalmic goiter S Towner N York M J & Med Rec 1923, cxviii, 4

Knochen injuries after radiation of the neck E. Koenig Muenchen med Wchnsch 1923, lxx, 558

Quitting the remaining lobe as an emergency procedure during thyroidectomy for exophthalmic goiter H O. Seaman Surg Gynec & Obst 1923, xxxviii, 83

Local anesthesia in thyroidectomy by Kulenkampff method C Schott Muenchen med Wchnsch 1923, lxx, 50

A technique of thyroidectomy F H Lavery Surg, Gynec & Obst 1923, xxxviii, 85 [427]

The influence of subtotal thyroidectomy upon the total metabolism E. Grafe and E. von Reizwitz Mitt d Grenzgeb d Med Chir 1923, xxviii, 5

The end results of surgery of the thyroid J. H. J. Parkeston Arch Surg 1923, vii, 37

A case of postoperative myxedema E. Bonilla and C. B. Sauer Surg 1924, 1923, lxx, 669

Acetonuria following thyroid operations R. S. Hubbard and C. W. Weiss Chilton Med Bull Chilton Springs N Y 1923, ix, 85 [427]

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings Cranial Nerves

Specific serum treatment of epidemic (lethargic) encephalitis further results E C Rossow J Am M Ass 1923, lxxx, 183 [428]

Brain injuries mechanics, prognosis, and treatment E. Bonilla California State M J 1923, xxi, 495

A depressed fracture over the angular gyrus clinical and radiological localization A P. Bickertwiler Brit J Surg 1923, xi, 75

- I points to the head illustrating the functions of the cortex. R. O. GORDON. *Bristol M. Char. J.* 1923, xi, 30.
- A case of reflex cortical spasm after finger injury. B. BAYO. *Rev. Suisse d'Accid. du Tra. et.* 1923, xvii, 73.
- A case of cerebral cyst in an infant. H. G. JONES. *Am. J. Dis. Child.* 1923, xxv, 435. [438]
- A case of cerebral abscess in child. J. P. PARKINSON and L. R. BROWNE. *Lancet*, 1923, cxxv, 1107. [439]
- Tumors as possible cause of brain tumor. E. S. KERNOTTE. *Lancet*, 1923, cxxv, 3.
- A case of brain tumor with unusual clinical findings. M. FLETCHER. *Kentucky M. J.* 1923, xxi, 303.
- Intracranial tumor causing quadranthemic hemiparesis. R. FORD. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Ophth. 30.
- A method for the localization of brain tumors in comatose patients: the determination of a communication between the cerebral ventricles and the estimation of their position and size without the injection of air (intraventricular examination). W. E. DAWSON. *Surg. Gynec. & Obst.* 1923, xxvii, 645. [439]
- The chemical value of encephalography. O. DAVID and G. GARRICK. *Fortschr. d. Geb. d. Röntgenstrahlen*, 1923, xxx, 558.
- The danger of lumbar encephalography in cases of cerebral tumors. W. DREX. *Zentralbl. f. Chir.* 1923, l, 47.
- The absorptive power of the subarachnoid space. T. HASEGAWA. *Japan. Ztschr. f. Dermatol. Urol.* 1923, xxi, 4. [441]
- Hydrocephalus. C. E. LOCKE. *Bulletin Med.* 1923, xi, 470.
- Cerebral pneumography as an aid in the early diagnosis of hydrocephalus. O. S. WATTS. *Minnesota Med.* 1923, 4, 434.
- Hydrocephalus secondary to cerebral gliosis. J. M. MACERA. *Seminars med.* 1923, xxx, 5.
- Trephination of the cerebellum. P. MARTIN. *Arch. franco-belges de chir.* 1923, xxvi, 357.
- The function of the lobes of the hypophysis as indicated by replacement therapy with different portions of the sex gland. P. E. SMITH and I. P. SMITH. *Endocrinology* 1923, 2, 579.
- The "cholesterol syndrome" in affections of the hypophysis. G. FUMASOLA. *Polytechn. Rome*, 1923, xxx, ser. prot., 807.
- The classification and treatment of hypophyseal disorders. J. L. THURNEY. *Endocrinology* 1923, vii, 558.
- Dyspituitarism and epilepsy. H. LEWIS and C. E. NISBET. *Med. Clin. N. Am.* 1923, vi, 147. [441]
- The lumbar method of Schüller-Duret without excitation of the arbut: the possibility of relative exploration of the base of the brain. P. BARTL. *Zell. Arch. ital. di chir.* 1923, vii, 40. [441]
- Chemical studies of vestibular and auditory tests in laryngeal surgery. W. P. FOLETT. *Laryngoscope*, 1923, xxxiii, 483.
- Post-traumatic meningitis or subdural hematoma. K. NATHAN. *Wien. med. Wochenschr.* 1923, lxviii, 28.
- Local meningitis. L. L. SMITH and J. B. NEAL. *J. Am. M. Ass.* 1923, lxxxv.
- Tuberculous meningitis simulating epidemic encephalitis. L. H. KENNEDY and L. H. KENNEDY. *Bull. et mèm. Soc. méd. d'hop. de Par.* 1923, lxviii, 858.
- Tuberculous meningitis. D. PATTERSON. *Practitioner*, 1923, cx, 43. [441]
- Otic meningitis. G. J. JENNINGS. *J. Laryngol. & Otol.* 1923, xxxviii, 364. [442]
- The morbid anatomy and drainage of otic meningitis. E. D. DAVIS. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Otol. 43.

- A case of division of the posterior sensory root of the trigeminal ganglion for infraorbital anesthesia. M. D. M. 1923, viii, 10.
- A report of two cases of surgically treated acoustic tumor. T. AORTA. *Deutsche Ztschr. f. Chir.* 1923, clxxvii, 90.
- A case of acoustic tumor (right) operated by Victor Hensley in 1923. Removal of the tumor. F. J. CLARKE. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Otol. 3.
- A specimen of brain and acoustic tumor. F. M. R. WALKER. *Proc. Roy. Soc. Med. Lond.*, 1923, xvi, Sect. Otol. 31.
- Acoustic tumors. F. M. R. WALKER. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Otol. 3.
- The surgical treatment of eighth nerve tumors. V. THORNTON. *Proc. Roy. Soc. Med., Lond.* 1923, xvi, Sect. Otol. 37.
- Glossopharyngeal neuralgia. J. B. DOLLE. *Med. Clin. N. Am.* 1923, vii, 485.
- Lesions affecting the vagus nerve. W. S. LEMON. *Med. Clin. N. Am.* 1923, vii, 493.
- A new and more accurate technique for sectioning the superior ganglionic division. S. L. SUTTER. *J. Am. M. Ass.* 1923, lxxxv.

Spinal Cord and Its Coverings

- Operative treatment of tumor of the cervical cord. J. ALBERT. *Deutsche Ztschr. f. Chir.* 1923, clxxvii, 345.
- A case of meningeal hemorrhage of spinal cord. J. HUBER and J. de MAMAS. *Bull. et mèm. d'hop. de Par.* 1923, lxviii, 96.
- Anterior poliomyelitis and its treatment in the acute and the reparative stage. J. HUBER. *Manchester and Woburn*, 1923, lxx, 435.
- A clinical consideration of spinal cord tumors. R. F. GALT. *South M. & S.* 1923, lxxvii, 35.
- Is the retention of sensation over the spinal segments of value in the differential diagnosis between cysts and intra-meningeal spinal cord lesions. W. KERNOTTE. *Can. med. Assoc. J.* 1923, lvi, 527. [443]
- Prognosis. C. M. KILPATRICK. *Brit. J. Chir.* 1923, clxxvii, 670.

Peripheral Nerves

- Some peripheral nerve problems. D. LEWIS. *Boston M. & S.* 1923, cxxviii, 973. [445]
- Neuritis and perineuritis of the arm. J. S. ROSE. *Ann. Surg.* 1923, lxxviii, 80.
- Late paralysis of the ulnar nerve. P. GOTTAL. *Bull. franco-belges de chir.* 1923, xxvi, 307. [446]
- The surgical treatment of sciatitis. H. H. DEUTSCH. *Ztschr. f. Chir.* 1923, clxxvii, 70. [445]

Sympathetic Nerves

- Surgical relations of the sympathetic nervous system. G. P. M. LEE. *Ann. Surg.* 1923, lxxviii, 64. [447]
- Observations on periauricular sympathetomy. J. P. MONTAG. *Zentralbl. f. Chir.* 1923, lxxviii, 829.
- The treatment of peripheral X-ray shock by periauricular sympathetomy. G. MONTAG. *Brit. J. Chir.* 1923, clxxvii, 3.
- Periauricular sympathetomy in sick rodentia. W. HUBER. *Zentralbl. f. Chir.* 1923, lxxviii, 83.
- Reaction of the sympathetic plexus collecta. R. R. RICH. *Rassegna internaz. di chir.* 1923, 243.

SURGERY OF THE CHEST

Chest Wall and Breast

- Chronic mastitis G KERRIN B t J Surg 9 3 [447]
 Tumors of the breast F E BURR Ohio State M J 1923 xii, 56
 Tumors of the breast C E BLACK Surg Gynec & Obst 923, xxxiv, 63
 Cancer of the breast L D BELLAMY Am J Clin Med 923, xxx, 470
 Carcinoma of the breast J W PARK Kentucky M J 923 xvi, 357
 Certain unusual features noted in case of inoperable cancer of the breast treated by roentgen ray A U DE JAKOVA Med Clin N Am 9 3, vii, 63
 Deep roentgenotherapy in carcinoma of the breast G F FRANKLIN Am J Roentgenol 9 3 566 [447]
 Results of postoperative irradiation of carcinoma of the breast J GAUNT Fortschrit d Geb d Roentgen Strahlen 923 xiv 336 [448]

Trachea, Lungs, and Pleura

- The diagnosis of laryngotracheal emphyseal conditions S JOLLAER Am J Roentgenol 9 3 547
 Mental epilepsy H R ORTIZ and A GONZALES Ann Surg 923 lxxvii, 6 [448]
 Acute bilateral suppurative pleurisy without symptoms L ANDREIVELLI Riforma med 923 xxxix, 705
 The treatment of pleural effusions with calcium chloride J J ANDOLA and A D S T MARIN Med Ibera 9 3 vi, 36
 The treatment of interlobar pleurisy and pulmonary suppuration by therapeutic pneumothorax J THORNTON and R LAYNE Bull et mèm Soc mèd d hôp de Par 1923 3, xxix, 807
 The treatment of empyema in infant J PORTER and M MORGAN Arch Pediat 9 3 xl 405
 The observation of chronicity in cases of post pneumonic empyema I F BUTTS Am J Surg 9 3 xxxiv, 76
 The treatment of the chronic stage of empyema H ILLUSVALL Am J Surg 9 3 xxxiv, 78
 The treatment of complete closed pneumothorax of one side by excision of the lung of the opposite side by severe bronchitis or pneumonia R FELLERS Zentralbl f Chir 9 3 l, 795
 Lung compression by bees y lipid paraffin in the treatment of lung tuberculosis bronchiectasis and lung abscess F W MCGUIRE Surg Gynec & Obst 9 3 xvi, 30 [448]
 The pneumothorax of Forlanini S COMI and G. POLICHI Rasse 9 3, xi, xxxi, 730
 Obstruction of the needle in the treatment of pneumothorax by Forlanini method J C RITI Polichin Rasse 9 3 xxxi xxxi, 730

- The cauterization of adhesions in artificial pneumothorax treatment of pulmonary tuberculosis under thoracoscopic control H C JACOBSEN Proc Roy Soc Med Lond 923, xvi, Sect Electro-Therap 45 [448]
 The treatment of sterile echinococcus cysts of the lung C AVONON and Polichin Rasse 923, xxx, xxxi, 798
 Abscess of the lung J J SWEENEY and E A GRABAM J Am M Ass 9 3, liii, 93
 The surgical treatment of pulmonary tuberculosis I KUTSCHER LINGENBERG Wien Klin Wochenschr 9 3, xxxv 379
 The clinical manifestations of primary cancer of the lung W W G MACLACHLAN Atlantic M J 9 3 xvi, 655
 The frequency and cause of primary carcinoma of the lung P HAMMON Mitt d Grenzgeb d Med Chir 9 3, xxxvi, 145 [449]

Heart and Pericardium

- Cardiotomy and alvulotomy for mitral stenosis, experimental observations and clinical notes concerning operated case with recovery S A LEVIN and J C CUTLER Boston M S J 923 cxxxviii, 3 [450]
 Tumor of the heart D V LOTT Spontaneitæ 9 3, lxxvii, 33
 Symplysis of the pericardium BAKER operation GOMPERT Bull et mèm Soc de chir de Par 9 3, xlix, 9 8

Oesophagus and Mediastinum

- Anomalies of the oesophagus—with case report T D KA and H L A ER J Iowa State M Soc 9 3 xii, 75
 Observations on early three cases of foreign bodies in the oesophagus and the bronchus H R ORTIZ J Med Soc N Jersey 9 3 xv 240
 Stricture of the oesophagus following typhoid fever P P V 40 Med Clin N Am 9 3, li 57
 Artificial esophagectomy of the oesophagus suggestion for the treatment of strictures A NARATH Deutsche Ztschr f Chir 9 3, cxxxviii
 Lesions of the oesophagus S THORNTON Arch f path Anat 9 3 cxvii 39
 Transpleural oesophagocutaneous fistula A HIND and W E LARK Ann Surg 9 3, lxxviii 66
 T cases of descending retro-oesophageal hernia with phlegmon of the neck and threatening mediastinitis: radical operation through the vascular route prophylactic collar mediastinotomy recovery O GUZZO Laryngoscope 9 3 xxxiii, 290 [451]

Miscellaneous

- Primary intrathoracic neoplasms A J B PINCH Practitioner 9 3, cx, 42 [451]

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- Investigations in the neurology of the abdominal wall C SOLDS Ztschr f d ges Neurol Psychiat 1923 lxxii 206
 Unusual hernia and the muscular theory R H R WELLS Brit J Surg 9 3 xi, 45

- Postoperative enteral hernia J C MASON Surg Gynec & Obst 923 xxxvii, 4
 Living sutures in the treatment of hernia W E GALLS and A B LEVINSKY Canadian M Ass J 9 3 xii 450 [452]
 Observations on 2,468 hernia operations by one operator J P HOGGER Surg Gynec & Obst 9 3 xxxvi, 7

- Associated acute thoracic and abdominal disease with report of a case of peritonitis and appendicitis at the same time. H. R. ROBERTS. *Am J Surg* 1933, 46: 1.
- Appendicitis complicated by acute portal thrombosis. W. W. FARR & M. J. AMERSON. *Am J Surg* 1933, 46: 1.
- An unusual cause of death in acute appendicitis. C. H. WATSON. *Brit J Surg* 1933, 20: 1.
- Subphrenic abscess secondary to appendicitis. P. W. ARNOLD. *N York M J & Med Rec* 1933, 11: 1.
- A case of malignant carcinoma of the appendix. W. GEORGE. *Arch Pathol* 1933, 3: 1.
- Acute sigmoiditis perforation and general peritonitis following rectal injection. C. MARTIN. *Med J Australia* 1933, 3: 1.
- Flaccid anus. M. L. BOLL. *et al.* *Soc de chir de Par* 1933, 10: 1.
- Left iliac area formed by Lambert procedure. COURTES & M. L. BOLL. *et al.* *Soc de chir de Par* 1933, 10: 1.
- The importance of proctologic examination. L. A. HAY. *Med Clin N Am* 1933, 18: 1.
- The operative treatment of prolapse of the rectum. H. FRANKS. *Arch Surg* 1933, 9: 1.
- Rectopexy by Lichtenstein's method. F. R. BRIT. *Idea Chir* 1933, 10: 1.
- A new method of treating hemorrhoids and other hemorrhoids. J. P. L. L. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.
- Situs inverts and recto-ventral anastomosis with atresia of the rectum. G. M. G. H. and M. R. R. *Brit J Surg* 1933, 20: 1.
- Cancer of the rectum: the formation of an artificial anus by Lambert procedure. PROCTOR & L. BOLL. *et al.* *Soc de chir de Par* 1933, 10: 1.
- The technique of partial amputation of the rectum. H. R. Z. *et al.* *Chir* 1933, 10: 1.
- A simple method of forming an artificial anus in cancer of the rectum. A. PARCETT. *Riforma med* 1933, 10: 1.
- Epithelioma vulvaris for an artificial anus. R. H. H. *et al.* *Chir* 1933, 10: 1.
- An operation for hemorrhoids. H. R. M. *et al.* *Brit J Surg* 1933, 20: 1.
- Tuberculosis of the anus and rectum. C. J. D. *Am Med* 1933, 10: 1.

Liver Gall Bladder P. access, and spleen

- The collateral circulation in the portal system. J. W. L. *et al.* *Arch Chir* 1933, 10: 1.
- The treatment of hepatopneumonia by suspension of the liver and elevation of the abdominal wall. H. R. *et al.* *Chir* 1933, 10: 1.
- Observations upon the phrenic tetrachlorophenol test for liver function. C. C. H. *et al.* *Am Med* 1933, 10: 1.
- The embolism of the common hepatic artery. L. BOLL. *et al.* *Soc de chir de Par* 1933, 10: 1.
- Hepatic aneurysm cured by embolectomy. T. R. *et al.* *Proc de la Soc Med* 1933, 10: 1.
- Atrophy of the liver with nodular hyperplasia. L. H. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.
- Tumor of the liver resulting from a benign tumor. BOLL. *et al.* *Soc de chir de Par* 1933, 10: 1.
- A case in which an adenoma weighing 10 gms. was successfully removed from the liver with remarks on the subject of partial hepatectomy. G. G. T. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.

- Primary carcinoma of the liver excised by operation. C. W. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.
- A case of resection of the liver for malignant disease spreading from the gall bladder. C. F. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.
- A case of carcinoma of an adenoma of the liver which had ruptured spontaneously causing internal hemorrhage. P. T. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.
- A case of primary tumor of the liver removed by operation. F. H. *et al.* *Proc Roy Soc Med Lond* 1933, 26: 1.
- Primary carcinoma of the liver report of one case. J. A. *et al.* *Kentucky M J* 1933, 10: 1.
- Biliary hydrops. H. H. *et al.* *Ohio State M J* 1933, 10: 1.
- The X-ray diagnosis of gall bladder disease. A. W. *et al.* *Arch Mediol & Electrotherapy* 1933, 10: 1.
- A few points regarding the diagnosis and treatment of gall bladder disease. M. F. *et al.* *N York M J & Med Rec* 1933, 11: 1.
- Microscopical study of biliary disease. B. H. *et al.* *Chir* 1933, 10: 1.
- Secondary cause of gall bladder pathology. R. D. *et al.* *Am J Surg* 1933, 10: 1.
- The selection of cases which may be benefited by liver resection or continuous medical drainage of the gall tract with brief discussion of methods. B. B. *et al.* *Internat J Surg* 1933, 10: 1.
- The pathologic anatomy of gall stone disease. W. H. *et al.* *Chir* 1933, 10: 1.
- Hydrops of the gall bladder. T. R. *et al.* *Chir* 1933, 10: 1.
- Jaundice in surgical cholecystitis without stones. H. R. *et al.* *Med Clin N Am* 1933, 18: 1.
- Failure of ligation of the cystic duct. A. H. *et al.* *Chir* 1933, 10: 1.
- Gall-stone disease. G. W. *et al.* *Brit J Surg* 1933, 10: 1.
- Thrombosis concerning gall stones (cholesterolosis of the biliary tract). A. W. *et al.* *Med Times* 1933, 10: 1.
- Removal of gall stones after operation. H. H. *et al.* *Chir* 1933, 10: 1.
- Primary cancer of the gall bladder of epithelial structure. C. H. *et al.* *Arch Med* 1933, 10: 1.
- The cause of bile ductitis. L. BOLL. *et al.* *Chir* 1933, 10: 1.
- New aspects in gall bladder surgery. P. W. *et al.* *Chir* 1933, 10: 1.
- The surgical management of obstructive jaundice. H. H. *et al.* *Chir* 1933, 10: 1.
- The retained gall bladder: its complications and the difficulties and disadvantages of secondary cholecystectomy. H. H. *et al.* *Chir* 1933, 10: 1.
- Studies on the bile and biliary diseases. S. H. *et al.* *Chir* 1933, 10: 1.
- The determination of bile salt in the blood. T. R. *et al.* *Chir* 1933, 10: 1.
- Two cases of cancer of the biliary passages. D. W. *et al.* *Chir* 1933, 10: 1.
- Secondary operations upon the biliary system. H. H. *et al.* *Chir* 1933, 10: 1.
- The surgery of the hepatic and common bile ducts. H. H. *et al.* *Chir* 1933, 10: 1.

Circles of the common duct formed about foreign body. R. GILSON. Bull et mémo Soc de chir de Par 19 3 xlii, 947.

The immediate and late results of cholecystocholangiotomy. H. FLOTHGEN and F. STEIN. Arch f klin Chir 9 3 cxlv, 49.

The orthology and pathology of the extrahepatic bile passages in their relation to gall stone diseases. L. SCHÖN. Klin Wochenschr 9 3, 4, 957.

Stones in the common and hepatic ducts. J. SIEGEL. Lancet, 9 3 cxv, 7.

Accessory pancreas. BOWEN LOWRY. ed BRITT. ed Bull et mémo Soc de chir de Par 9 3 xli, 860.

Accessory pancreas. J. L. ROY. BRITISH Bull tamen Soc de chir de Par 9 3, xlii, 860.

Isopneustic contraction pancreatic lesion. SA. f Bull et mémo Soc de chir de Par 9 3, xlii, 943.

Tropical sprue and its relationship to distal changes of pancreatic digestion. D. N. SELLERS and W. DICKS. South M J 9 3 xvi, 503.

Two pancreatic functional test. G. CAMERO. Med J Australia, 9 3, 78. [444]

A clinical study of pancreatitism. J. B. D. Am Clin Med 9 3.

Acute hemorrhagic pancreatitis. Cause preventing certain essential features. A. G. T. FISHER. Brit J Surg 19 3 xi, 70.

The diagnosis of pancreatic colic. R. NOV. S. VITUS. Arch de med chir y special 9 3 xi, 40.

Cysts of the pancreas. F. ROSSIGNOLI. Pol lun Rome 19 3 xxi, ser. prat. 994.

Acute infection of the pancreas. preliminary stage of acute pancreatic necrosis. H. ZOLFF. Deutsche Ztschr f Chir 9 3 cxliii, 30. [444]

The pathogenesis of acute pancreatic lat necrosis. R. SCHNEIDER. Schwed and Wochenschr 9 3 liii, 400.

The morphological diagnosis of carcinoma of the tail of the pancreas. T. SCHULTZ and I. PRIZOFF. J. Am M. Ass. 9 3 lxxvi, 275.

The surgical anatomy of the vascular system of the spleen. J. VON W. Zentralbl f Chir 9 3 i, 446. [444]

Thrombosis of the splenic vein as an indication for surgical interference. W. WITZ. 47 Versamml d deutsch Gesellsch f Chir 9 3.

Traumatic rupture of the normal spleen. I. C. ROSS. Minnesota Med 9 3, 915. [445]

The treatment of rupture of the spleen. A. H. SCOTT. Arch franc belges de chir 9 3 xvi, 30.

Chronic septic splenomegaly. C. W. LASKET. 10. [445]

A case of chronic splenomegaly of bacterial origin. J. P. WILSON. Proc Roy Soc Med Lond 1 xvi.

Study Dis. Child 64.

Hemorrhagic cyst of the spleen. F. H. VAN ZEN. Arch f Chir 9 3 i, 30.

Abcesses of the spleen. C. I. VAN and J. f. LUX. J de chir 19 3 xxi, 615.

Tumor of the spleen, splenectomy. J. DE I. [445]

Primary sarcoma of the spleen. H. C. W. DE I. [445]

Bloodless splenectomy. LITTON. 47 Versamml d deutsch Gesellsch f Chir 9 3.

The results of splenectomy and resection of the spleen. LA. CAMP. 47 Versamml d deutsch Gesellsch f Chir 9 3.

The results of splenectomy with particular reference to the blood picture. W. WITZ. 47 Versamml d deutsch Gesellsch f Chir 9 3.

Splenic aneurysm. clinical and pathological study of sixty case cases. W. C. CHAMBERLAIN. Am J M Sc 9 3, cxv, 850. [444]

Miscellaneous

The diagnosis of obscure abdominal lesions. W. H. DICKSON. Am J Roentgenol 9 3 x, 540.

Upright posture causing abdominal pain simulating symptoms associated with visceral pathology. C. L. TAY. Colorado Med 9 3, xxi, 9.

The acute abdomen and its pitfalls. M. I. BLAND. Ohio Stat M J 9 3 xxi, 475.

Acute lesions of the upper abdomen. F. G. DYAS. Illinois M J 9 3 xli, 27.

Spasm of the diaphragm. LARDENON. Bull et mémo Soc de chir de Par 9 3, xlii, 930.

Unilateral elevation of the diaphragm. L. RICHIE. Fortsch d Geb d Roentgenstrahlen, 9 3, cx, 473.

Operations for diaphragmatic hernia. H. B. STON. Va Surg 9 3 lxxvii, 5.

Subphrenic abscess. F. ATTWOOD. Rikshes med 9 3, xxi, 637.

The suprasympatric transverse sulcus, sign of aneurysm. C. L. SACCONAGHI. Policlinico Rome 9 3 xxi, ser. prat. 903.

Subphrenic abscess and peritonitis. G. C. EYTON. Os. Rikshes med 9 3, xxi, 56.

Diagnosis in the right upper quadrant. J. C. SH. ALLEN. J. Iowa Stat M Soc 9 3, xli, 267.

The pathogenesis of the twisting of pedicle of the lower organ. B. THOMAS. Deutsche Ztschr f Chir 9 3, lxxvii, 24.

Intestinal retroperitoneal hernia. W. WOLFF. Zentralbl f Chir 9 3 i, 709.

Retroperitoneal and mesenteric tumors. H. H. SCHULTZ. Arch f Gynaec 9 3, cxvi, 490.

A foreign body protruding into the preperitoneal space. J. M. CARALLON and N. PELLER. Bol de la Soc de obst y ginec de Buenos Aires, 9 3, 49.

Experiences with new methods of dissection in laparotomy particularly with regard to F. VOOR. Zentralbl f Gynaec 9 3 xli, 69.

Anthrax of the sympathetic abdominal plexuses induced by the injection of streptococci. M. ROCHER. Presse méd Par 19 3 xxi, 601.

GYNECOLOGY

Uterus

The Krieger operation for uterine prolapse. H. J. BLANCH. Arch Gynec & Obst 9 3, xxi.

The Krieger operation for prolapse in the aged. Correll. Bull et mémo Soc de chir de Par 9 3, xlii, 907.

Uteral cancer. the treatment of prolapse in 1891. W. WITZ. J de chir 19 3 xxi, 615.

Uteral cancer. the treatment of prolapse in 1891. W. WITZ. J de chir 19 3 xxi, 615.

The Fort operation for prolapse. SA. 170. Bull et mémo Soc de chir de Par 9 3, xli, 8.

A hysterical adenoma of the abdominal wall following an intrauterine operation of the uterus. C. D. LORAIN. J Obst & Gynec Brit Emp 19 3, xxi, 5. [447]

Distorsion of the uterus. hysterical adenoma of the abdominal wall. W. T. D. [447]

Distorsion of the uterus. hysterical adenoma of the abdominal wall. W. T. D. [447]

Distorsion of the uterus. hysterical adenoma of the abdominal wall. W. T. D. [447]

- Intraligamentary of the uterus. I. S. LATTIN Arch
Ital di chir. 9 3 vii, 30 [467]
- A foreign body in the uterus twelve years with no
symptoms. J. GLASER J Am M Soc 9 3, 1022, 10
- Cystitis of the uterus and adnexa. B. FURTH Surg
Gynec. & Obst. 29 3, 223, 37
- A mixed tumor of the cervix and vagina in an infant
5. McLEA and M. WOODLEY Am J D Child
9 3, 221, 69
- Uterine fibromyosarcoma. P. I. T. SOULIER Boston M
& S J 19 3, 1222, 97 [467]
- Some varieties and complications of uterine fibroids.
M. L. DEL COLLO BURNETT Arch di ginec. ginec
9 3, 224, 129
- The treatment of uterine fibromyosarcoma with the X-ray.
I. RATERA and S. RATER Prog de la med. Madrid L
9 3, 227, 77
- The limitations of radiotherapy in the management of
fibromyosarcoma of the uterus. J. A. CORICAN Am J
Obst. & Gynec. 19 3 vi 4 [468]
- Radiation treatment in hemorrhagic conditions. J. C.
DUMAS Surg. Med. 9 3, 122, 6
- The X-ray radium in the treatment of uterine
hemorrhage. J. W. LAUREN South M J 9 3, 228,
139
- Chemical surgery in chronic cervical endometritis, with
rational technique and case reports. C. W. STEINER
N York State J M 9 3, 229, 301
- Endometrioma of the uterus. D. P. M. SMITH Surg
Gynec. & Obst. 9 3, 229, 4
- Uterine carcinoma and its treatment by continuous
low heat. J. F. PERRY Am J Obst. & Gynec. 9 3 vi,
78
- The treatment of cancer of the cervix of the uterus.
I. MALLER Presse med. Par. 9 3, 230, 39 [468]
- Histologic and clinical studies of cervical carcinoma
treated with radium and X-ray. H. SCHWITZ North est
Med. 19 3, 231, 3
- Deep radiation therapy in inoperable carcinoma of the
uterus and breast. J. M. B. L. South M J 9 3,
133, 17
- Deep radiotherapy of uterine cancer. M. M. C. LUTIN
Semin. med. 9 3, 2, 7
- Abdomino-external colpotomy for carcinoma of
the cervix. J. H. ABRAHAM Semin. med. 9 3, 23, 33
- A ruptured hematoma of the ovary with extensive
intraperitoneal hemorrhage. L. C. RIVETT Proc Roy
Soc Med. Lond. 1, 231 Sect. Obst. & Gynec., 8
- A dermoid cyst of the left ovary. E. POTTERI Bull
et mem. Soc. de chir. de Par. 1923, 232, 921
- The transplantation of an ovarian tumor in the case of
laparotomy wound. G. VILLA Polich. Rasse
19 3, 232, 22, but 304
- Report of three cases, adenocarcinoma of the ovary
and tube with tuberculous, fibrous case in normal
case, and mixed carcinoma of the left ovary. L. J. EVERT
and O. C. MURPHY M. L. Cho N Am 1923, vii, 73
- A compact apparatus for the determination of the
patency of the fallopian tubes in sterility and the method
of use. O. S. CHICKS Am J Obst. & Gynec., 1923
1, 99
- Radiography of closed fallopian tubes. W. T. KATZNER
Am J Obst. & Gynec. 19 3 vi
- Classification of the uterus and fallopian tubes. A. H.
ALMENDAR Am J Obst. & Gynec., 9 3, 4, 53
- Salpingitis with adhesions to the gross. H. H. COHEN
Med. J. La. Trias, 1923, 4, 67
- Embryoma and mixed tumors of the fallopian tube.
J. DELAYRE Gynec. et obst. 1923 vii 301 [469]
- A primary epithelioma of the fallopian tube.
G. LUTIN and R. MORLOT Gynec. et obst., 1923 vi,
325 [469]

2 normal Genitalia

- Abdominal hysterectomy and reconstruction of the pelvic
diaphragm. C. LUTIN Arch Ital di chir. 1923, vii, 31
- Carcinoma of the female urethra, with notes of 19
cases treated with radium. H. F. SEE J Obst. &
Gynec. M. L. Femp 9 3, 233, 5 [469]
- Anatomical and clinical contribution to the study of
benign tumors of the female external genitalia. J. M.
GONZALEZ Arch Ital di chir. 19 3, 234, 177 [469]
- A rare transformation of the vulva. J. RONDACHE Gynec.
& Obst. 1923, 235
- Total absence of the anus the formation of anus
by plastic operation. J. T. VAN CANTER Arch. Brit. 1923
1, 97
- Transplantation of the small intestine for the creation
of an artificial vagina. C. D. DEL. Gynec. obst. 1923
2, 20
- Vulvovaginal progesterone in endometriosis. L. O. GALT
Surg. med. 9 3, 235, 67
- A calcified tumor of the recto vaginal septum. L. C.
RIVETT Proc Roy Soc Med. Lond. 1923, 236, Sect.
Obst. & Gynec. 9
- A combined abdomino-perineal procedure for radical opera-
tion in anal carcinoma. J. PANTOPOLITZ Zentralbl. f.
Chir. 19 3, 1, 793

Miscellaneous

- The interrelation of gynecology and urology. H. M. V.
WYNN Minnesota Med. 1923, vi, 445
- Diagnostic notes in obstetrics and gynecology. W. W.
CHIPP Canadian M. J. 19 3, 236, 493
- Theories of menstruation. J. R. HENK Gynec. et
obst. 1923, vii 445
- The effects of physical exercise on menstruation. S.
CLOW Lancet 1923, 237, 14 [470]
- Radiography as a cause of menstrual disturbance.
S. WHEAT N York M J & Med Rec 1923, 238, 45
- Radiotherapy in amenorrhea. BALLI and FORZANO
Acta obstetrica 19 3, 23, 10
- The menorrhage of young girls. E. DOD Gynec. et
obst. 19 3, 23, 90
- Adrenal suppression in the course of uterine fibromatosis.
A. WORMK. Gynec. et obst. 9 3, 23, 1
- Preliminary decapsulation in uterine fibromatosis for
bilateral adnexal lesions. C. D. DEL. Gynec. et obst.
9 3, 23, 3
- Abdominal hysterectomy with heat for supportive
sterilization. LUTIN (PROCEED) Gynec. et obst. 3 3, 23,
3 (Surgery of the adnexa. A. FAN Arch. Brail de med.
19 3, 236, 63)
- Invaginated ovary, its use and preparation and use
position as to method of sterilization. H. BRADLEY
J. A. CORICAN and W. G. L. Am J Obst. & Gynec.
19 3, vi, 23
- The ovary—its role in the invagination of cancer. H.
GLASER Obst. Internat. J. Med. & Surg. 9 3, 237, 19
- Tuberculosis of the ovary and pregnancy. V. 1275
Gynec. et obst. 9 3, vi, 91 [468]
- Limitation of the ovarian circulation in the treatment
of sclerosing ovaritis. M. V. AUSTINABAN Gynec. med.
1923, 238, 23
- Rupture of multilocular ovarian cyst. I. M. BELL
J. Am M. Ass. 19 3, 239, 9

- The roentgen ray in the treatment of certain types of metrorrhagia F M HOOVER Virginia M Month 9 3 147
- A report of two cases of menstruating fistulae E A WILLIAMS Am J Obst & Gynec 9 3, vi, 95
- The new applications of radiotherapy in gynecology S RECASENS Prog de la clin Madrid, 9 3, xiv 603
- Prostatectomy Par 9 3, xxii, 703
- Stimulating radiotherapy in gynecology E ZWEIFEL Rev argent de obst y gynec 9 3, vi, 7
- The uses of radium in malignant and non malignant conditions with particular reference to the field of gynecology I I SARONEN Ohio State M J 9 3, xiv, 275

- Objections to radiotherapy in women M PAZZI Actinoterapia, 9 3, iii, 74
- The chemical aspects of adenomyomata of the female pelvic organs A DORRIN Proc Roy Soc Med Lond 9 3, xvi, Sect Obst & Gynec, 8
- Lipoid cysts of the peritoneum C DUCKER and A BARRS Gynec et obst 9 3, ii, 6
- Primary sterility A J ROBINSON Am J Obst & Gynec 9 3, 63
- The pathogenesis and treatment of certain forms of sterility in women POSILACÓV Prog de la clin Madrid 9 3, xiv 666 Med Ibera, 9 3, vii, 530
- The treatment of sterility in women Reforma med 9 3, xxxiv 708

OBSTETRICS

Pregnancy and Its Complications

- The aged primipara R RUMFELT Gynec et obst 1921, 4, 470
- New methods of diagnosing early pregnancy W C GUYLER J Missouri State M Ass 9 3, xi, 3
- A case of quadrupel pregnancy S R FORTER and W CARSON Lancet, 9 3, cv, 70
- Radiographs in pregnancy S RECASENS Prog de la clin Madrid, 9 3, xv 68
- Röntgenograms of the fetal skeleton as position of pregnancy I I STEIN and R A ARONS J Am M Ass 9 3, lxxii, 4
- The diagnosis of anencephaly before delivery J C LUTVING Rev argent de obst y gynec 9 3, ii, 8
- Fibroid tumors complicating pregnancy and their treatment G W KOWAL Am J Obst & Gynec 9 3, vi, 61
- The incidence of cancer of the cervix in pregnancy R C HART N York State J M 9 3, xxxii, 300
- Ita during the fourth month of pregnancy without other signs of toxemia W F T II, LT IV and I S HALL Edinburgh M J 9 3, xxx, T Edinburgh Obst Soc, 3
- The pathologic anatomy of auto intoxication in pregnancy and child birth I HARTEZ Berz Gynec & Obst 9 3, xxxvi, 707
- The routine treatment of eclampsia J L LACLEY Edinburgh M J 9 3, xxx, T Edinburgh Obst Soc, 10
- Intractable vomiting of pregnancy S I BERMA Kansas med 9 3, xxi, 99
- Two cases of severe hyperemesis gravidarum review of therapeutic measures S L BERMA Bol de la Soc de obst y gynec de Buenos Aires, 9 3, 169
- Intervention in intractable hyperemesis gravidarum I LUCIO BONICA Gynec et obst 9 3, 24
- Hemiparesis occurring in pregnant women 1 full term puerperal onset accompanied by transient albuminuria various sections gradual recovery F COOK Proc Roy Soc Med Lond 9 3, xvi Clin Sect, 43
- Cardiac decompensation during pregnancy and labor L L BOE (re California M J) M 9 3, vi, 200
- Heart disease in pregnancy W B B, ED and P D WATTS Boston M & S J 9 3, lxxviii, 974
- Notes on the problem of heart diseases in pregnancy B L H MILTON Boston M & S J 9 3, lxxix, 97
- Pregnancy and heart disease D G CA WELLS Cana med M J 9 3, xii, 44
- Pregnancy and tuberculosis O H SCHWARTZ J Missouri Stat M Ass 9 3, xi, 7

- Deaths during pregnancy S GOLDSCHMIDT Zentralbl f Gynaek 9 3, lxxiv, 636
- Acute ketosis during pregnancy J H ROBINSON Lancet, 9 3, cv, 69
- Abortion, criminal and inevitable A W MOORE Kentucky M J 9 3, xvi, 33
- Uteroplacental crises causing abortion GOODELL Bull et mem Soc med d hop de Pa 9 3, 38, xxxix, 864
- Artificial hysterectomy in severe postabortive peritonitis J P TOULON Rev franc de gynec et d obst 9 3, xxvii, 330
- A case of placenta previa S GONZALEZ Siglo med 9 3, lxx, 697
- Abdominal cesarean section for placenta previa M O FARRALL Rev argent de obst y gynec 9 3, vi, 90
- A study of the death of the full term extra uterine fetus and its scientific value J OLIN N York M J & Med Rec 9 3, cxvix, 8
- Abdominal pregnancy J B J Virginia M Month 9 3, 147
- The processes of fetal pregnancy L Mc DONALD Am J Obst & Gynec, 9 3, 17
- A further contribution to the clinical aspects and the treatment of the complications of fetal pregnancy (LIEBOWITZ and G II STRA) Hospital Gynec (obst), 9 3, ii, 73
- Synchronous rupture of bilateral ectopics L R AVELL Canadian M Ass J 9 3, xii, 54
- Ruptured ectopic gestation, operation with recovery case report C FARMER Kentucky M J 9 3, xxi, 335
- True ovarian pregnancy O B COOK and L L C ALLEN J Am M Ass 9 3, lxxii, 1

Labor and Its Complication

- Hysterocoele and morphia parous in the management of labor F A H MICHARD Med J Australia, 9 3, li, 83
- Dysclasia due to rigidity of the uterus on resulting from acute inflammation J L BAILL SERRA med 9 3, x, 60
- The obstetrical forceps F LA TONN Cl obst, 9 3, xiv, 1, 8
- The prevention of birth injuries of the child H EBERLEZ Illinois M J 9 3, xiv, 30
- A study of the results in face presentations A W TALLANT Am J Obst & Gynec, 19 3, vi, 16
- The report of a case of rupture of the uterus R H DORR Virginia M Month 9 3, 155
- The etiology of eclampsia R OTTERLENG J Am M Ass, 19 3, lxxii, 295

A physiopathologic study of kidney with double ureter J GUTY and G JEANNERET J d urol méd et chir 93, xi 8 [477]

Report of case of duplication of the renal pelvis and ureter with extravesical opening of one ureter resulting in hydrophorosis of the upper pelvis and hydro ureter H C BOWEN, J Med Clin N Am 93, vii, 4

Transmural rupture of the kidney V F BLANKHALL J Lancet, 1923, xlii, 343

Double transmural rupture of the kidneys in the presence of hydrophorosis M ROBERT Ztschr f urol Chir 1923, xli, 433

Hydrophorosis W C QUINCY J Urol 19 3, 2, 45 [477]

Hydrophorosis with ectopic kidney R FRANK Zentralbl f Gynaek 9 3, xliii, 366

Primary stone formation in an ectopic kidney C CHATPAHO Publis Rome 19 3, xii, sex chr 366

Congenital nephritis and cholelithiasis F KAUPEL Ztschr f urol Chir 93, xii, 8

A large serous cyst of the right kidney in young pregnant woman A ANGLI Arch Ital di chir 9 3, vii, 899

The importance of physical factors in the prognosis of renal infections L HENRIAS Atlantic M J 9 3, xvi, 699

Kidney infections due to the gonococcus H M N WILSON J-Lancet, 9 3, xlii, 35

Renal tuberculosis L CARTER Med Klin 9 3, xiv, 897

The surgery of renal tuberculosis LUTHERILL 47 Versamml d deutsch Gesellsch f Chir 9 3

A fatal case of renal insufficiency secondary to nephrectomy for tuberculosis PATEL and THURNOT J d urol méd et chir 9 3, xvi, 66

Colibacillus septicus BARK 47 Versamml d deutsch Gesellsch f Chir 9 3

The pathology of nephritis dolorosa and calculous stones W LERICH Ztschr f urol Chir 9 3, xii, 366

Lesions from toxic chloroform nephritis GUICHARDI J d urol méd et chir 9 3, xvi, 47

Conservative surgical treatment of suppurative nephritis LERICH Ztschr f urol Chir 9 3, xii, 66

Pyelitis from bacillus pyocyaneus G FOLLET Semaine méd 1923, xii, 47

Pyelotomy M ZORICH Ztschr f urol Chir 9 3, xi, 69

Anterior pyelotomy P ROSENTHAL Zentralbl f urol Chir 93, xii, 269

Malignant neoplasms of the kidney occurring in infancy J H MASON, J and W C MACCARTY Surg, Gynec & Obst 9 3, xvi, 78 [477]

An unusual malignant mixed tumor (adenosarcoma) of the kidney in young child A J HOOD and H ALPERT California State J Med 9 3, xii, 88

A case of renal sarcoma A FARA Arch brasil de med 19 3, xii, 442

Perineal hydrophorosis CORNER 47 Versamml d deutsch Gesellsch f Chir 9 3

A perinephric tumor appearing first on the left and after an interval of 3 years on the right side N DILLON and C DICKER J d urol méd et chir 9 3, vi, 195 [478]

A large perinephric tumor on the right side causing mechanical obstruction A RICHARD Bull et méde Soc de chir de Par 9 3, xlii, 936

The removal of a ureteral stone by cystoscopic manipulation, disintegration of cystine stone by peptic lavage and internal medication A J CROWELL Surg Gynec & Obst 9 3, xvi, 11

Double ureter & bilious kidney nephrectomy A GRILLAST J d urol méd et chir 9 3, vi, 97 [478]

Primary carcinoma of the ureter L H BIRKBECK and J F MCCARTHY J Am M Am 9 3, lxxxv, 64

Bladder Urethra, and Peni

A new cystoscope for the female bladder and urethra L F LAKSON Am J Obst & Gynec 9 3, 4, 5

Abstraction from the urinary bladder F C MA and J A H MAJOR Am J M Sc, 9 3, clvii, 96

Rupture of the bladder P C PIERCE J Lancet, 9 3, xli, 357

Cinematographic cystoscopy STREIN 47 Versamml d deutsch Gesellsch f Chir 9 3

An enormous calcalculus P MAIST Siglo méd 9 3, lvi, 690

Bladder hernia in infancy C OLIVA Arch ital di chir 93, vi, 533 [478]

Bladder diverticula A BLOCK and P FRANK Ztschr f urol Chir 93, xii, 242

Notes on case of diverticulum of the bladder J M ROBERT Glasgow M J 9 3, xvii, 1

Cystocoele due to diverticulum of the bladder containing stone A CARTER, R G A DUTTO and A OCAIRO Semaine méd 9 3, xvi, 58

The operative treatment of calcal diverticula J S JOE Proc Roy Soc Med Lond 19 3, xvi, Sect Urol [479]

Neuromatosis of the bladder F STREIN Deutsche Ztschr f Chir 9 3, clviii, 37

Syphilis of the urinary bladder E P CHOCOMELA C op Mék deq 9 3, lvi, 855, 854, 903 [479]

The diagnosis and treatment of inflammatory infections of the bladder and kidney pelvis A LERICH Ztschr f urol Chir 9 3, xi, 71

Tumors of the bladder J H H J Oklahoma State M Am 93, xvi, 5

A case of carcinoma of the bladder with cysts C BLAVET DE BAZA J d urol méd et chir 9 3, xi, 59

Electro coagulation and chemo coagulation of bladder tumors E WORMILO Ztschr f urol Chir 9 3, xii, 585

An improved method of maintaining permanent cystostomy opening C ROBERT Ann Ital di chir 9 3, 4, 5 9

A case of total cystectomy in woman with carcinoma of the bladder ROBERT and THURNOT J d urol méd et chir 93, xv [479]

The present and present day treatment of urethral strictures F BRACK Arch f path Anat 9 3, cxlii, 37

Structure of the bulbous urethra O D LOMBARDO Surg Gynec & Obst 93, xvi, 69

Benign pen urethral tumors F F GRIMALDI Semaine méd 9 3, xii, 140

Urethral defects in women L FRANK Ztschr f urol Chir 93, xii, 35

Hypertrophy A MORALEZ Siglo méd 9 3, lvi, 540

Genital Organ

Adenoma of the prostate gland C M MIV J Indiana State M Am 9 3, xvi

Tuberculosis of the adenomatous prostate J D MIV J Urol 9 3, 3, 8

Myomatous and adenomatous hypertrophy of the prostate F A TIERCE and C ZA GER Ztschr f urol Chir 9 3, xi, 37 [480]

The surgical treatment of prostatic hypertrophy H R BRITT Ztschr f urol Chir 9 3, xii, 15

Recurrence of the prostate W L C CARTER and A F CALDWELL J Med Am Georgia, 9 3, xii, 30

Cancer of the prostate J H S. 1939 J Biol Chem 131 100
 Met M Am 9 3 21, 7
 Certain criteria of the neoplasia in prostatic
 disease F M WATSON and C C H. N York
 State J M 4 222, 209
 The phylloides test as a means of establishing the pre-
 sence of operations on prostatic cancer M N 30 and G
 COWLEY J J Biol Med 10 3 21
 The course of the suprapubic urinary fistula following
 suprapubic prostatic resection observations on sixty-eight
 cases H P W. WATSON Br J Surg 9 3 21 71
 Testicular transposition case 118 and 119
 Zicker J Urol Chir 10 3 22, 210
 Test. orchitis from torsion 118 and 119
 WICK L and NORTON Arch France-Belges de chir
 19 1 21 600
 The differentiation between tuberculous and non tuber-
 culous inflammation of the epididymis A K 571
 J Urol 9 3 21, 25
 The surgical treatment of tuberculous lesions of the epididymis
 C N. PROTHMAN Acta chirurgica Scandin 19 3 21 331

Miscellaneous

Some things the general practitioner should know about
 urology C J. LANE S J. LANCET 9 3 21, 3
 Concerning the power of the urine F P. T. Arch
 Ital di chir 10 3 21, 4
 Absorption from the urinary tract J A H. MARCOW,
 J Urol 19 1, 67
 Radiography in the examination of the urinary tract
 C. G. BETH. LA J. RADIAN 9 1
 The production of urinary alkali by the crystallization
 and infection of teeth in dogs with streptococcal (from cases
 of nephrolithiasis) I C. KROVICH and J C. M. 191
 Arch Int Med 19 3 21, 607

Complete urinary obstruction due to by lithiasis C L.
 DUBOIS J Urol 19 3 21
 The causative factor of renal obstruction in upper
 urinary obstruction C C. BROWN (Ann Hosp Med, De-
 troit, 9 3 21)
 The clinical significance of hematuria H. KRENNER
 Wira. Nikola Verlag, 1935
 The significance of hematuria C. W. SANDERSON
 Urol & Cystit Rev 1935, 272, 435
 The treatment of colicystitis in children A. PORTER
 Am J Dis Child 9 3 21, 56
 The pathologic and prognostic significance of hydrone-
 phrosis A. J. 1935, 118, 1935, 1935, 1935, 1935
 The histologic tissue reaction of hydronephrosis F. RORER
 M. Zicker J Urol Chir 10 3 21, 37
 A standard for the determination of gonorrhea in the
 male F. M. PETERSEN and N. S. LUSTIGER (Derm M J,
 1935 43)
 The diagnosis and cure of gonorrhea G. W. HURTE
 California State J M 1935 and 303
 Anomalous gonorrhea (from WATSON) J. 1935
 met et. 19 3 21, 3
 The clinical observations with uroscopy in the treat-
 ment of gonorrhea A. J. GREENBERG and
 M. J. GARY (Urol & Cystit Rev 1935, 272, 435)
 A note on the bacteriostatic action of urine after the
 intravenous administration of streptomycin in normal
 rabbits J. H. HILL and J. C. COWLEY Br J Urol
 10 3 21, 3
 Microbiological studies in urology A. C. PETERSEN &
 York M J & Med Rev 1935, 272, 435
 The choice of anesthesia in urology H. H. S. 1935
 Surg Gynec & Obst 1935, 272, 435
 Transcatheteric removal and mobilization of the Mammaries
 stricture D. H. CAMERON J Urol, 9 3 21

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Condition of the Bones, Joints, Muscles, Tendons, Etc

Regenerative processes in the long bones with normal and
 lowered blood supply C. RICHIE Arch Int Chir 19 3 21, 3
 On the origin and cartilaginous transformation resulting from
 grafts of bone tissue B. PETERSEN Arch Ital di chir
 19 3 21, 3
 The X-ray diagnosis of bone tumors R. W. LORRIN
 Illinois M J 19 3 21, 4
 Osteitis fibrosa R. L. J. 1935, 1935, 1935
 Observations on osteitis deformans S. MOORE Am
 J Orthopaed 19 1, 307
 Osteomyelitis A. J. OBERMEYER J. LANCET 9 3 21, 3
 A case of acute osteomyelitis J. I. T. WICK Kans
 Med J 9 3 21, 333
 The etiology of hock disease (metatarsalgia) I.
 CUN. BRACE Arch Int Chir 9 3 21, 44
 The etiology of hock disease W. ALPERT Fortsch
 d. Geb. d. Radiologie 19 3 21, 304
 The etiology of hock disease M. HARRIS, Br J
 1935, 1935, 1935
 Multiple tuberculous bone lesions complicating chronic
 pulmonary tuberculosis J. ROSE BLATT J Am M Ass
 1935, 1935, 1935
 The pathology and treatment of bone tuberculosis R.
 W. PETERSEN (J Urol 1935, 1935, 1935)

The serological diagnosis of bone tumors R. W.
 HITCHCOCK U S Naval M Bull 1935, 272, 435
 Metastatic tumors of bone C. A. JOLL. Br J Surg
 9 3 21, 3
 The serological diagnosis of osteosarcoma L.
 T. 1935 Arch France-Belges de chir 1935, 272, 435
 Pathological remarks on sarcoma of the long bones
 G. S. 1935 Br J Surg 19 3 21, 3
 Reactive processes in cartilage after trauma lesion
 F. KROVICH Arch Int Chir 1935, 272, 435
 The constitutionally soft epiphyses and its relation to
 rickets, osteochondritis, and arthritis deformans L. 1935
 M. Detschke Zicker J Chir 1935, 272, 435
 (Osteochondritis deformans, rickets and osteo-
 pathologic study R. BROWN Br J Chir 1935, 272, 435)
 Charcot joint following trauma C. H. PETERSEN Obs
 State M J 9 3 21, 3
 The nature of the so-called rheumatoid arthritis and
 osteo arthritis A. G. T. FLETCHER Br M J 1935, 272, 435
 Arthritis deformans, varieties and treatment A. VETTER
 17. Vernehmlich d. deutsch Gesellschaft f. Chir 1935
 Hereditary and its relation to deforming diseases of
 the joints PETERSEN 17. Vernehmlich d. deutsch Gesellschaft
 f. Chir 1935
 Roentgen graphic historical studies of patients with
 chronic deforming arthritis R. O. T. 1935, 1935
 Roentgen 1935, 272, 435

- The skin temperature of tuberculous joints C M Wesschen and W. Knecht 9 3, 115, 70
- Processes of healing in injuries of the joint surfaces *Archiv für Verwundung d. deutsch. Gesellschaft f. Chir* 1923
- Good and bad ankylosis *Revue Arch. franco-belges de chir* 19 3, xvi, 575
- Operation of muscle and spinal cord injury M Krieger *Deutsche Zeitschrift f. Chir* 1923, cliviii, 60
- A case of myositis ossificans exhibiting acute symptoms C M PAGE *Proc Roy Soc Med Lond* 9 3, xvi, 131, Sect 3
- Muscular trophy of peripheral organs M ARCAZZI *Arch ital di chir* 1923, vii, 190
- Subcutaneous anastomosis rupture of three tendons G M FARMAN *Revue Arch. franco-belges de chir* 1923, xvi, 557
- Hereditary clondrodynia J J McCURRY and R W BAKER *J Am M Ass* 19 3, lxxxv, 1000
- Osteomyelitis of the left humerus treated by osteo-removal TOTTEN, BART, OBERLIN, VANDER, and others *Bull et mém Soc de chir de Par* 9 3, xiv, 80
- A case of syphilitic osteomyelitis involving the elbow joint C M PAGE *Proc Roy Soc Med Lond* 9 3, xv, 131, Sect 3
- Malignancy of the os lumbum SONTAG *Fortachr d. Geb d. Roentgenstrahlen*, 1923, xxx, 487
- Injuries about the carpus P NEUMAYER *Beitr. klin. Chir*, 1923, clviii, 720
- The mobility of the joints of the hand H PETERSEN *Zeitschrift f. Anat. Entwicklungsgesch* 9 3, lii, 505
- Jarvis deformity metatarsophalangeal osteochondritis P LARIN *J Am M Ass* 1923, lxxxv, 80
- Unusual calcareous deposits in the soft tissues of the hands J R LOOBY *Arch Radiol & Electrotherapy* 1923, xxviii, 55
- Cervical node H BRUN and H W FLETCHER *Surg. Clin N Am* 9 3, liii, 65
- Osteo-arthritis of the spine C GOULDENBROOK *Proc Roy Soc Med Lond* 9 3, xvi, Sect Med 63
- Primary osteosarcoma of the adductor magnus C F BLANCHETT *Arch ital di chir* 9 3, vii, 35
- The prognosis and treatment of congenital LARSON *Chir y lab*, 9 3, 46
- The development of osteochondritis juvenilis *Ann. 47 Verwundung d. deutsch. Gesellschaft f. Chir* 1923
- Two cases of deforming osteochondritis of the hip one treated for eleven years and the other complicated by congenital lumbar kyphosis ROSE *Rev d'orthop* 9 3, xii, 29
- Tuberculosis of the hip in children pathology, symptoms, and diagnosis J H MARCUS *J Med Soc N Jersey* 1923, xii, 3
- Bone cyst of the neck of the femur ROUVILLON and FLEURY *Bull et mém Soc de chir de Par* 1923, xiv, 1009
- A clinical and anatomical study of case of congenital bone necrosis BOULARA and BOURGEOIS *Rev d'orthop* 9 3, xii, 445
- Chronic hypertrophic villous arthritis of the knee H I. SALTZ *Ann Surg* 9 3, lxxviii, 64
- Radiography of the knee joint L. SCOTT *Arch Radiol & Electrotherapy* 9 3, xxviii, 57
- Rupture of the patellar ligament J PHILLIPS *Arch ital di chir* 1923, li, 833
- A case of sarcomatous peritendinitis of the articular capsule of the right knee U. FACTI *Arch ital di chir* 19 3, ii, 43
- Amputation of the foot through shortened calf muscles and its non-surgical correction (1) J. W. T. THE *Med Times*, 9 3, li, 35
- A case of bilateral foot I. MIN. N. Chir d. organs d. mov. ment 9 3, 403
- The prevention and rational treatment of flat foot A. WINTER *Arch f. orthop. Unf. Chir* 9 3, vii, 47
- Inflammation of the deep calcaneal bursa A. T. HERTZEL *J Am M Ass* 1923, lxxxv, 8
- Surgery of the Bones, Joints, Muscles, Tendons, Etc.
- The obliteration of bone cavities in chronic osteomyelitis by free fat transplantation G R DUN *Minnesota Med* 1923, 4, 379
- Further experiences with the regeneration of high grade rickets deformities of the bones C. SPAIN *Zeitschrift f. orthop. Chir* 9 3, xlii, 6
- The treatment of severe kyphosis by combined forceful and gentle mobilization DE MEYER *Arch. franco-belges de chir* 9 3, xvi, 578
- Discussion on arthroplasty at the International Congress of Surgeons HAY GROVES, PUTT, MACALAN, and others *Brit M J* 9 3, ii, 142
- Tendon transplantation W S ROBERTS *South M J* 9 3, xvi, 545
- Immediate plastic operations in injuries involving tendons or joints C M DOUBLANCE and J W BRAMSTED *Ann Surg* 19 3, lxxviii, 60
- The responsibility of the surgeon for the formation of ischemic contracture A. SCHWARTZ *Med Klin* 9 3, xii, 373
- Discussion on the operation of spastic paralysis A. S. B. BAKT T. H. OBERLIN, G. RICHARD, E. M. LITTLE, and others *Proc Roy Soc Med Lond* 9 3, xvi, Sect Orthop 13
- The surgical reconstruction of the paralytic upper extremity A. STEINER *J Iowa State M Soc* 9 3, xii, 77
- Orthopedic surgery of the upper extremity A. STEINER *Minnesota Med* 9 3, vi, 45
- The treatment of calcified subdeltoid bursitis by diathermy J F HARRIS *J Am M Ass* 9 3, lxxxv, 65
- The treatment of the flail elbow joint with new operation of arthrodesis W. MAYER *Lancet*, 9 3, vii, 706
- Rupture of the tendon of the extensor pollicis longus after fracture of the radius, and its operative treatment G. HALCK *Arch f. klin. Chir* 9 3, clviii, 8
- Tendon transplantation to the forearm R D KIRBY *Surg. Gynec. & Obst.* 9 3, lxxviii, 1
- Albee method in the treatment of Pott disease J G. LERCAVO *Segno infid* 9 3, lxx, 624, 632, 650, 707
- Pseudarthrosis of the neck of the femur treatment with bone peg A. BARNETT *Bull et mém Soc de chir de Par* 9 3, xlii, 877
- New concepts relating to amputations and the osseous prothesis D. VALLE, G. BOSCH ARANA, and I. WILDERHUT *Chir d. organs d. mov. ment*, 9 3, vii, 244
- Flail knee extirpation of the osseous P. HALLOW *Bull et mém Soc de chir de Par* 1923, xiv, 884
- The technique of osteoplastic resection for ankylosis of the hip also or arthrodesis W. FORTY *Zentralblatt f. Chir* 9 3, li, 836
- The treatment of psoas aneurysm and varicos by bow shaped osteotomy PETERSEN *47 Verwundung d. deutsch. Gesellschaft f. Chir* 9 3, 403
- The treatment of traumatic wounds of the knee joint R C WYNN *J Lancet*, 9 3, xlii, 333

- The treatment of carbuncle with the actual cautery W E MOWERY *Am J Surg*, 9 3, xxxiv, 70
 Bilateral iliac abscess treated by oxygen inflation W R STEWART *Lindsburgh M J* 1923, xix, 23
 Tetanus N GREGORY *Veroeffentl d Krieger-Konstitutionspath*, 10, vi, 5 [501]
 The treatment of tetanus A A HEROLD *N Orleans M & S J* 9 3, lxxxv, 88
 The convulsion treatment of tetanus A BUTELLO *Zschr f gerichtl Fortbild* 19 2, xix, 427 [501]

Anesthesia

- Psychonarcosis in obstetrical, gynecological, and surgical procedures H HOFERWALD *Beitr klin Chir* 19 3, cxviii, 766
 Observations on anesthesia, with a report of 500 consecutive cases B RAPPOPORT *Boston M & S J* 9 3, lxxxv, 69
 General anesthesia C S GILCHRIST *J Natl M Am* 1923, xv, 194
 The effects of spinal trauma on the anesthetized patient C L HERRIN *Proc Roy Soc Med Lond* 9 3, xvi, Sect A, 7 [532]
 Anesthesia during anesthesia N KLEIN *Texas State J M* 1923, xix, 249
 Narcosis and lectins K TITTEL *Deutsche med. Wochenschr* 9 3, xlii, 53
 Ethyl chloride as an anesthetic for minor operations in children S F ROE *Lancet*, 9 3, cxv, 58 [527]

- The new anesthetics ethylen and acetylen L CHERRIER *Presse med Par* 1923, xix, 394
 The provision for operation in endotracheal anesthesia I W MACGILL *Lancet*, 1923, cxv, 68
 Spinal anesthesia with storaxine C LACROIX *Pathe, Roue* 1923, xix, ser prnt 567
 Spinal and caudal anesthesia J T CAMP *Surg Gynec & Obst*, 19 3, xxxvii, 64
 Spinal anesthesia: the disadvantages of the intrathecal injection of caffeine P GUDAL *Presse med Par* 1923, xix, 38
 Experiences with splanchnic anesthesia E KUTNER-LINDBERG *Wien klin Wochenschr* 1923, xxxv, 16 [502]
 Rectal anesthesia Von LOEWEN *47 Verhandl d deutsch Gesellschaft f Chir* 9 3
 Rectal anesthesia W BRYA *Surg Gynec & Obst* 19 3, xxxvii, 107
 Some of the factors upon which the successful use of local anesthesia depends R E FARM *Illness M J* 1923, xli, 9 *Canadian M Am J* 1923, xix, 97
 The toxicity of cocaine as influenced by the rate of absorption and the presence of adrenalin E. L. ROSE *J Lab & Clin Med* 1923, viii, 656

Surgical Instruments and Apparatus

- A modification of the ordinary apparatus for proctodynia G BOTTARDI *Polizina, Rome*, 1923, xix, ser prnt 748
 The spot light in surgery J G R MATHIAS *Surg Gynec & Obst*, 9 3, xxxvii, 86

PHYSICO-CHEMICAL METHODS IN SURGERY

Röntgenology

- The use and abuse of the X-rays L H KERR *Ann Surg* 1923, xli, 364
 X rays and X ray apparatus J A ROBERTSON *J Radiol* 19 2, iv, 33
 Practical roentgen spectrometry and its physical basis K STANNING *Am J Roentgenol* 1923, x, 470 [503]
 Some X ray problems of the general practitioner I P LLOYD *Canadian Pract* 9 3, xliii, 200
 Recent developments in protective methods and appliances C F BELL and G E WARD *Am J Roentgenol* 1923, 625
 The protection of the radiologist in modern therapy F GARCIA DONATO and V GARCIA DONATO *Prog de la Clin Madrid* 9 3, xix, 73
 The roentgenographic study of the nose R A RIVINGTON *Am J Roentgenol* 9 3, x, 576
 An experimental contribution to the problem of the growth stimulating effect of the roentgen rays in normal bone tissue A STANNING *Fortschr d Geb d Roentgenröntgen*, 9 3, xlii, 300 [504]
 Sterility and the X ray J BRIDGES *Presse med Par* 1923, xix, 643
 The present status of radiotherapy H W VAN ALLEN *Boston M & S J* 19 3, cxliii, 5
 The present status of radiation therapy with case reports J T STEVENS *J Radiol* 1923, iv, 39
 The problem of dosage in radiation therapy R BASS *Actinotherapia* 9 3, vi, 3
 The principles of deep X ray therapy J ROBERTSON *J Med Soc N Jersey* 1923, xli, 55
 The efficiency of radiation therapy U V PORTSMOUTH *J Lab & Clin Med* 1923, vii, 776
 A note on the discrepancy in the values of secondary voltage given by the spectrometer and the equivalent

- spark gap W E SCHALL *Arch Radiol & Electrotherap* 1923, xxxvii, 50
 The X ray treatment of tumors E L JENKINS *J Radiol* 1923, iv, 30 [505]
 The influence of X ray therapy on benign and malignant growths G SCHWARTZ *Am J Roentgenol*, 1923, x, 62
 The X ray to the treatment of cancer D D TALLEY *J South M & S* 1923, lxxxv, 404, Virginia M Month 1923, 1, 130
 Roentgen absorption in the blood and extracorporeal irradiation of the circulation in the treatment of cancer H PICARD *Scandinavian Therap*, 19 2, 2, 407 [504]
 High voltage roentgen therapy S MOORE *J Am M Am* 9 3, lxxxv, 266
 The present mode of roentgen ray therapy in deep-seated lesions F W O'BRIEN *Boston M & S J* 19 3, cxliii, 1
 A practical method to determine the correct X ray dose in high voltage treatment H HOFERWALD *N York M J & Med Rec* 1923, cxviii, 25
 Measurements on the American deep-therapy machines, with special reference to the Dumas method G E FRANKLIN *J Radiol* 1923, iv, 5 [504]
 The technique of deep surgical X ray therapy O JUNGCLAUS *Scandinavian Therap* 1923, xvi, 800
 A case of death resulting from rupture of the aorta after deep irradiation by the roentgen rays, the being at the same time critical report regarding the effect of the radio-select apparatus C FIEDER *Scandinavian Therap*, 1923, xvi, 658
 Roentgen therapy L HAAS *Wien klin Wochenschr* 1923, xxxv, 23
 The roentgen ray ulcer and its treatment P P COIT *Fortschr d Geb d Roentgenröntgen* 1923, xlii, 746 [505]

Radium

- A report on radium therapy. F. J. ANGEL and L. J. COOPER. *Nedlands Med. M. J.* 9: 1, 14, 15.
 The most of skin tests to determine an objective dose for radium radiation. A. L. DEAN. *J. Am. J. Roent.* 19: 1, 614.
 A radium syngator for small lesions. N. T. B. 1913.
 The radium treatment of cancer. M. H. B. 1913.
 The progress and tendencies in the radium treatment of cancer. C. R. 1913.
 New series for the termination of radium skin doses. L. H. 1913.
 Am. J. Roentgenol. 9: 3, 574.

Miscellaneous

- The treatment of gonorrheal infection by diathermy. P. C. 1913.
 The treatment of gonorrheal infection by diathermy. P. C. 1913.
 The treatment of gonorrheal infection by diathermy. P. C. 1913.

- Radiant light. Heat. Orthopedic conditions. H. W. 1913.
 The therapeutic use of radiant light and heat. W. B. 1913.
 Annual Report of the American Association of Physical Therapists. 1913.
 The application of heliotherapy. P. 1913.
 Modern methods of heliotherapy. C. 1913.
 Physical therapy. J. H. 1913.
 Physical therapy. J. H. 1913.
 The treatment of cancer by diathermy. 1913.
 The treatment of cancer by diathermy. 1913.
 The treatment of cancer by diathermy. 1913.

MISCELLANEOUS

- A case of congenital syphilis with aortic R C SHENCE and L. C. TITTLE South M J, 19 3, xvi, 51
- Acute polyomyelitis in an adult W. RICHARDVILLI Bruns med 923, xxxvii, 323
- The treatment of leprosy R. M. WILSON South M J 9 3, xvi, 507
- Bacteriostasis by mixture of dyes J W. CHURCHMAN J Exper Med 923 xxxviii,
- A case of actinomycosis with recovery A D. DILLON and F. C. H. BERGE vt Brit M J 19 3, ii, 6

Ductless Glands

- A case of osteomiasis in the nose study of the glands of internal secretion CHARPOT and HAUDENAU Bull et mèm Soc mèd d hôp de Par 923, 3 xxxix, 972
- A new case of polyglandular syndrome associated with severe cutaneous neuritis N. VALONIA Rifforma med 1923, xxxix 721
- Diseases of the ductless glands (Collective review) Med Sc Abst & Rev 923, viii, 284
- The experimental basis of endocrine therapy A J CLARK Brit M J 9 3, ii, 51 [1927]

Surgical Pathology and Diagnosis

- A new technique for the application of the reduced silver nitrate method of Cajal to sections of the retina F. I. BALSTIENA Arch. Ophth 923, li, 151
- Cellular leucocytosis and disposition to disease A. THIELHAUSER and H. RITZKE Deutsche Zeitschr f Chir, 923, cliviii, 78
- The chemical pathology of pyloric obstruction in relation to tetany study of the chloride, carbon dioxide, and urea concentrations in the blood H. A. ALONSO J Arch Surg 19 3, ii, 166

Experimental Surgery

- The value of animal experimentation to the medical profession and to the people V. C. Y. DORAN Boston M & S J 923, clxxix, 62
- The use of methylene blue to test organic reduction report of studies on its circulation and elimination E. SCHUEMANN and L. J. REIDMANN Proc med Soc 9 3, xxxi, 553
- A study of the viability of bone after removal from the body S. L. HALL Arch. Surg 9 3, vii, 273. [1927]

DECEMBER, 1923

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR HERKELEY MOYNIHAN K.C.M.G., C.B., Leeds
PAUL LECENE Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG, Roentgenology
CHARLES B. REED, Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT, Genito Urinary Surgery	FRANK J. NOVAK, J., Surgery of the Ear
PHILIP LEWIN, Orthopaedic Surgery	Noise and Throat

CONTENTS

I	Authors	ii
II	Index of Abstracts of Current Literature	iii
III	Editor's Comment	x
IV	Abstracts of Current Literature	529-609
V	Bibliography of Current Literature	610-624
VI	Volume Index	i-xxix

Editorial communications should be sent to Franklin H. Martin, Editor, 30 N. Michigan Ave., Chicago.
Editorial and Business Offices, 30 N. Michigan Ave., Chicago, Illinois, U. S. A.
Publishers for Great Britain: Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, London, W. C.

CONTENTS—DECEMBER, 1923

ABSTRACTS OF CURRENT LITERATURE

SURGERY OF THE HEAD AND NECK

- Head**
Atkinson, F. H. Ununited Fracture of the Lower Jaw With or Without Loss of Bone 539

- Eyes**
Atkinson, F. Corneal Injuries in Industrial Occupations
Davis, W. E. The Growing Importance of Mapping Fields of Vision
Barber, J. H. The Surgical Anatomy of the Lachrymal Sac
Perry, L. C. Slit Lamp Studies of Herms of the Vitreous: Its Relation to Cataract Operations
Kutner, C. A Series of 100 Cases of Cataract Removed under Subconjunctival Bridge
Lovinscott, J. A. Local Anesthesia an Adjuvant in Ocular Therapeutics: Is the Process of Absorption under Nerve Control?
Crisley, R. C. The Bactericidal Power of Arginol
Genovese, H. Diseases of Retinal Vessels and the Early Signs of Arteriosclerosis in the Eye
Goss, H. L. The Effect of Blood Transfusion on the Retinates of Pernicious Anemia

- Nose**
Mollison, W. M. A Case of Vertigo Cured by Opening the External Semicircular Canal
Howner, L. A Study of the Mechanism of Pain as Seen in Otolological Cases
Jury, T. H. Brain Abscess Due to Otitic Infection: Right Temporoparietal Abscess without Clinical Signs
Davis, E. D. D. The Morbid Anatomy and Drainage of Otitic Meningitis

- Nose**
Madhonnov, D. Fibrosarcoma of the Nasopharynx Treated by Operation and Radium
Lorror, J. E. Cerebrospinal Rhinorrhea: With the Report of Cases

- Mouth**
Grosser, J. W. The Surgery of Harelip and Cleft Palate Deformities
Russ, M. L. The Present Status of the Pulp and Root Canal Problem

- Throat**
New, C. B. Congenital Obstruction of the Larynx and Pharynx

- Thomson, St. C.** A Laryngeal Case Apparently of Epithelioma (Possibly Syphilis) Completely Healed and Arrested under X-Ray Treatment Without Operation 533

- Neck**
Hosson, F. G. A Comparative Study of the Basal Metabolism in Normal Man 534
Starlinger, F. Physico-Chemical Investigations of Thyroid Problems 534
Rupp, T. and Clay, H. T. A Survey of Thyroid Enlargement Among the Children of Grand Rapids 534
Ecksteinberger, H. The Prevention of Goiter and Its Recurrence 535
Hentzler, A. E. The Nature and Treatment of Isthmical Goiter 535
Willert, F. A., Boothby, W. M., and Wilson, L. B. The Heart in Euthyroidal Goiter and Adenoma with Hyperthyroidism, with Note on the Pathology 535
Austin, R. C. Surgical Indications in Goiter 537
Hartman, B. The Indications for the Surgical Treatment and Prophylaxis of Goiter 538
Pemberton, J. de J. The End Results of Surgery of the Thyroid 538
Mayo, C. H. and Pemberton, J. de J. Surgery of the Thyroid and Its Mortality 539

SURGERY OF THE NERVOUS SYSTEM

- Brain and Its Coverings: Cranial Nerves**
Torresiani, Benley. Signs of Deviation in Case of Lesion of the Frontal Region and the Influence of Stimulation of the Frontal Region upon Provoked Vestibular Nystagmus 540
Locke, C. E. Hydrocephalus 540
Dawry, W. L. The Space Compensating Function of the Cerebrospinal Fluid—its Connection with Cerebral Lesions in Epilepsy 541
Koljuraev, S. L. The Treatment of Cortical Epilepsy by Injecting Alcohol into the Motor Centers 541
Smith, P. E. and Smith, I. P. The Function of the Lobes of the Hypophysis as Indicated by Replacement Therapy with Different Portions of the Ovary Gland 541
Jury, T. H. Brain Abscess Due to Otitic Infection, Right Temporoparietal Abscess without Clinical Signs 541
Gambrell. Encephalography 542
Sellner, W. G. The Diagnosis of Brain Tumor 542

- D VOT, W. E. The Diagnosis and Treatment of Brain Tumors 54
- W. THIRTELL, P. Anatomical Considerations on Intracranial and Transcranial Subdural Hemorrhages in the Adult 54
- DOYLE, J. B. Glossopharyngeal Neuralgia 543
- CURRY, F. J. A Case of Acoustic Tumor (Right) Operation Performed by Sir Victor Horsley in 1909 Removal of Tumor Followed by Recovery 543
- WALKER, F. M. R. Specimens of Brain and Acoustic Tumors 543
- WALKER, F. M. R. Acoustic Tumors 543
- THOTTER, W. Surgical Treatment of Eighth Nerve Tumors 543
- KALIFORN, W. P. Clinical Studies of Vestibular and Auditory Tests in Intracranial Surgery 543
- D VOT, E. D. D. The Mental Anatomy and Development of Otic Nerve 543

Spinal Cord and Its Coverings

- SURGEY, P. Radiography, Localization of Spinal Lesions by X-ray Method 543
- Peripheral Nerves 543
- M. JACOT, P. Double Union of One Nerve Trunk and Another 543
- SCARF, G. Habitual Displacement of the Ulnar Nerve in Carpal Tunnel and Volvulus 543
- D. KA, T. A. S. B. OPIUM, T. H., RUDOLPH, G. LITTLE, F. M. and others. A Discussion Regarding the Operative Treatment of Sympathetic Paralysis 543

SURGERY OF THE CHEST

Chest Wall and Breast

- GLAM, I. Additional Observations on the Diverse Picture of Subacute Mastitis with the Formation of Abscesses in the Breasts 547
- BLUM, I. I. Tumors of the Breast 547

Trachea, Lungs, and Pleura

- P. ROSE, F. The Mechanism of Action of Artificial Pneumothorax on the Basis of Anatomical-Pathological Observations 547
- STEIN, W. H. Pulmonary Abscesses Radiographically Considered 547
- KELG, W. J. Is Hyperpneumia Prophylactic Against Postoperative Pulmonary Complications 543

Heart and Pericardium

- WALL, F. A. BOOTH, W. M. and WILSON, L. B. The Heart in Ischemic Heart Disease and Adrenalin Hyperthermia with Note on the Pathology 533

Esophagus and Mediastinum

- BRIDGES, E. Contributions on the Pathology of the Thyroid Gland II The Surgical Treatment of Thyroid Adenoma and the Importance of the Thyroid in Surgical Infection 547

SURGERY OF THE ABDOMEN

- Abdominal Wall and Peritonium 547
- M. WOT, J. C. Postoperative Ventral Hernia 547
- Gastro-Intestinal Tract 543
- KRISTEN, M. F. Diagnosis of Gastric Disease 547
- W. RIE, S. H. Carcinoma of the Stomach 547
- HERZEL, L. A. Operation for the Relief of Carcinoma 530
- MICHAEL, H. A. J. The Chemical Pathology of Peptic Ulcer in Relation to Tetra A Study of the Chloride Carbon Dioxide, and Urea Concentrations in the Blood 530
- SCHROEDER, R. Gastroscopic Studies on the Healing of Gastric Ulcer 530
- CHAMBER, Three Cases of Perforation of the Stomach by Ulcer 531
- LYNN, Two Cases of Perforation of the Duodenum by Ulcer 531
- BALFOUR, D. C. The Use of the Caecum in Peptic Ulcer 531
- JONES, E. S. and RAVEN, F. W. A Technique for the Resection of Gastric and Duodenal Ulcers 531
- ASTUM, T. The Formation of Hemorrhagic Eschara in the Mucosa of the Excised Pylorus 531
- DERGONOV, H. Retrograde Intussusception of the Small Intestine After Gastro-Esenterostomy 531
- TESS, F. J. Four Cases of Volvulus of the Small Intestine with Observations on the Etiology 531
- LEE, H. H. Intestinal Surgery 531
- PA. EXT, C. A. The Technique of Axial Anastomosis of the Alimentary Canal 531
- LEWIS, A. Procedure to Facilitate the Excision of the Coeliac Strich 534
- FOLGER, H. O. Intermittent Duodenal Obstruction in Children 534
- HUGH, G. P. B. Duodenal Diverticula with Report of Case of Gangrenous Diverticulitis 534
- MICHAEL, V. A. Cancer of the Duodenum 533
- KOCH, A. Resection of the Duodenal Ulcer at the Pylorus 533
- LOVE, H. L. Meckel Diverticulum and Intestinal Obstruction 533
- V. WOT, B. M. Traumatic Lesions of the Intestine Caused by Two Penetrating Blunt Force 533
- ALLEN, C. D. The Treatment of Spastic Constipation 536
- STRATTON, A. A. Ulcerative Colitis 536
- HUGHES, W. Chronic Ulcerative Colitis and Its Treatment 537
- BROWN, F. W. Duodenal Eschara in Chronic Ulcer by Colitis 537
- KOLODNY, A. The Fat Reactions in Appendicitis and Cholecystitis 537
- VANDON, C. Acute Septicemic Peritonitis and General Peritonitis Following Rectal Injection 537
- H. VOT, I. A Modification of Lambert's Colonotomy 536
- WIMMER, P. The Treatment of Rectal Prolapse in Children by the Prone Position 536

- Butz, L. A. The Importance of Proctoscopic Examination 558
- Luttwitz, C. The Surgical Physiology of the Large Intestine 559
- Wolfsen, K. Postoperative Treatment Also Contribution to the Causation of Congenital Mesenteric Defects and Extensive Resections of the Small Intestine 60
- Liver, Gall-Bladder, Pancreas, and Spleen
- Hosoda, C. C. Observations upon the Phenol tetrachlorophthalan Test for Liver Function 559
- Schmitt, O. Animal Experimentation on the Influence upon the Secretion of Bile of the Administration of Florida, Preparations of Internal Secretory Glands, and Various Drugs 560
- Jain, S. S. and Lyles, J. H. The Mortality After Liver and Pancreas Operations 560
- Rome, C. The Influence of Cholelithiasis upon the Digestive Tract 560
- Daneshmandi, E. The Effect of Cholelithiasis and Cholecystectomy on the Secretory Function of the Stomach and Duodenum 56
- Park, F. Pyloric and Duodenal Stenoses Due to Gall Stones and Their Surgical Treatment 56
- Park, F. Cholecystectomy for Lithiasis, Transverse Section of Three-Quarters of the Circumference of the Common Duct Suture Cure 56
- Grady, K. Subsequent Examinations of Patients Operated upon for Gall Stones in the Serrum Hospital in the Period from 8y to 9 56
- Seitz, E. The Care of the Stump After Cholecystectomy 56
- Scott, L. and Schmitt, A. The End Results of 100 Cholecystectomies and Eighty-Two Cholelithotomies from the Standpoint of Postoperative Complaints 56
- Crile, G. W. Special Points in Gall Bladder Surgery 56
- Lyle, B. B. V. The Selection of Cases Which May Be Benefited by Intermittent or Continuous Medical Drainage of the Gall Tract, with Brief Discussion of Methods 56
- Seckert, J. Stones in the Common and Hepatic Ducts 563
- Mayer, R. J. The Surgery of the Hepatic and Common Bile Ducts 563
- Mohr, B. Secondary Operations upon the Biliary System 563
- Lehmann, H. Chronic Biliary Fistula. Implants too of Bile into the Stomach 563
- Glass, E. Persistent Pain as a Characteristic Early Symptom in Acute Pancreatitis 566
- Ficker, A. G. T. Acute Hemorrhagic Pancreatitis. A Case Presenting Certain Unusual Features 566
- Pedersen-Krøja, G. F. Chronic Pancreatitis 566
- Deaver, J. B. A Clinical Study of Pancreatitis 566
- Ryba, A. D. Pancreatic Cyst 567
- Lindberg, W. J. Pancreatic Cyst 567
- Scott, T. and Pfeiffer, F. Roentgenological Diagnosis of Carcinoma of the Tail of the Pancreas 567
- Hennet, J. M. Splenectomy in Hemorrhagic Purpura 568
- Miscellaneous
- Frick, K. The Technique of Examination by Pneumoperitoneum 568
- Parker, C. H. A Report of Three Unusual Abdominal Cases 568
- Randcock, W. W. Resuscitation in Abdominal Surgery 568
- GYNECOLOGY
- Uterus
- Parhamoff, O. Intestinal Uterine Fistula and Their Treatment 570
- DeGraw, C. Cancer of the Neck of the Uterus Treated with Radium, Cure Maintained for Twelve Years 570
- Naarro Blanco, F. Hysterectomy for Fibromyomata Previously Irradiated 570
- Adnexal and Peri-Uterine Conditions
- Kennedy, W. T. Radiography of Closed Fallopian Tubes 570
- Aldridge, A. H. Insufflation of the Uterus and Fallopian Tubes 570
- Donald, A. The Clinical Aspects of Adenomyomata of the Female Pelvic Organs 57
- External Genitals
- O'Connor, V. J. Primary Carcinoma of the Female Urethra, Report of a Case Treated by Deuthermy 571
- Miscellaneous
- Haug, E. and Heudorfer, K. Postoperative Adhesions Following Gynecological Laparotomies 57
- OBSTETRICS
- Pregnancy and Its Complications
- Stein, I. F. and Aron, R. A. Roentgenograms of the Fetal Skeleton as a Positive Sign of Pregnancy 573
- Hartman, C. R. Weight During Pregnancy 573
- Korner, G. W. Fibroid Tumors Complicating Pregnancy and Their Treatment 573
- McDonald, E. The Processes of Tubal Pregnancy 573
- Labor and Its Complications
- Ottewill, R. The Etiology of Eclampsia 574
- Amphac, B. M. Gillespie, W. Macow, W. D. Bowch, W. S. and others. The Treatment of Eclampsia—A Symposium 574
- Dove, R. H. The Report of a Case of Rupture of the Uterus 575
- Puerperium and Its Complications
- Vorob, Michov, and Sedallian. Vacuumtherapy in Puerperal Infection 575

Newborn

- WILLIAMSON, A. C. Placental Ties and Its Relationship to Internal Venous System

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

- SALOGA. Demonstration of Patient in Whom One Suprarenal Gland Was Extirpated Because of Suprarenal Arterial Gangrene

- HENCK, P. S. Salivary Gland and the Mercury Combustion Power of Saliva. A New and Simple Index of Renal Insufficiency

- JOSEPH, E. Difficulties in Estimating Surgical Insufficiency of the Kidney

- MARCELINO, O. Free Grafting of Omentum in Case of Peritonitis. Nephrectomy for Movable Kidney. Repeated Crises of Anuria Cured by Ureteral Catheterization

- ISRAEL, A. Studies of the Contractility of the Renal Pelvis and Ureter

- BLOCH, A. Chronic Pyelitis or Infected Hydro-nephrosis

- DEBROUERE, D. V. Tumors of the Kidney

- HORN, A. J., and ALBERT, H. An Unusual Malignant Mixed Tumor (Adenocarcinoma) of the Kidney in a Young Child

- STEVENS, W. F. The Diagnosis and Surgical Treatment of Malignant Tumors of the Kidney

- FAVERLEY, R. Complications of Nephrectomy

- KELL. Animal Experimentation in Anastomosing the Ureters but the Gall Bladder is Extirpation of the Bladder

- HANAUER, E. J. A Simple Treatment of Certain Lesions of the Intracaval Ureter in the Female

- HUTCH, F. MORRISON, D. M. and LEE BROWN, R. K. Methods of Demonstrating the Circulation in General as Applied to Study of the Renal Circulation in Particular

Bladder, Urethra, and Penis

- MAVE, F. C., and MACDON, J. A. H. Absorption from the Urinary Bladder

- FRISCH, R. E. The Value of Diagnostic X Ray in Neoplasms of the Urinary Bladder

- BRUCE, H. C. Report of Cases of Malignant Growth of the Bladder Treated by Resection and Radiation

- BAIRD, E. The General and Present Day Treatment of Strictures of the Urethra

- LEWIS, H. Plastic Operations on the Male Urethra

- JOSEPH, M. K. Epithelioma of the Penis Followed by Malignant Chancroidal Infection

Lymph Glands

- WILLIAMS, E. H. J. The Incidence of Malignant Disease in the Apparently Benign Lymphadenitis

- WILLIAMS, E. H. J. On the Surgical Treatment of Disease of the Lymph Gland

- WHITE, H. P. W. The Closure of the Suprapubic Urinary Fistula Following Suprapubic Prostectomy. Observations on Sixty-Eight Cases

- KIMO, F. Vasostomy for Spinal Vascular, with Description of a New and Improved Technique for the Operation

Miscellaneous

- THOMAS, G. J. Some Things the General Practitioner Should Know About Urology

- HILL, J. H., and COURTNEY, J. A. C. A Note on the Bacteriostatic Action of Urine After the Intravenous Administration of Mercurochrome to Normal Rabbits

- MACDON, J. A. H. Jr. Absorption from the Urinary Tract

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- KATZMANN, P. R. The Conducting Properties of Protoplasts and Bone Medulla in the Formation of Bone

- OSWALD, A. J. Osteomyelitis

- JOLLE, C. A. M. Isolated Tumors of Bone

- CHERRY, and CHERRY. Myositis Ossificans Localized in an Area of Neurofibroma

- KATZMANN, P. R. A Case of Multiple Xanthomas Gravitata in Tendons

- FRISCH, A. O. T. The Nature of the So-Called Rheumatoid Arthritis and Osteo-Arthritis

- SCHEIDT, G. Habitual Displacement of the Ulnar Nerve. Cubitus Varus and Valgus

- S. TITLER, E. Sympathetic Inflammation of the Tendon Sheaths of the Hands and Feet as an Occupational Disease

- LAKE, F. J. Microscopic Findings in Juvenile Arthritis Deformans—Large Calcified Bodies Osteochondritis Deformans Juvenile Case—and Comparative Research Concerning the Epiphyseal Head of the Femur with Particular Reference to the Femur

- ROSE. Two Cases of Deforming Osteochondritis of the Hip, One Case Followed for Eleven Years and the Other Complicated by Congenital Lumbar Kyphosis

- KATZMANN, P. R. Unusual Injuries About the Knee Joint

- BROTHMAN, and BROTHMAN. A Clinical and Anatomical Study of Cases of Congenital Genu Recurvatum

- DEYER, C., and WHITE, H. P. Gonorrheal Arthritis of the Knee. Nature of Gonorrheal Arthritis. Correlation of Gonorrheal Arthritis with Gonorrheal Arthritis

- LAKE, F. J. Juvenile Deforming Metastrophalagical Osteochondritis

- Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- H. G. GIBSON, P. R. MACDONALD, and others. Discussion on Arthroplasty at the International Congress of Surgeons

- Hysterec** Total Subperitoneal Removal of the Cervix in Case of Osteomyelitis and Regeneration of the Bone 592
- PAGE, C. M.** Four Cases of Flexion Contracture of the Forearm Treated by Muscle-Sliding Operation 59
- COLOVA, P. D.** Hamstring Transplantation for Quadriceps Paralysis 599
- EVANS, H.** The Operative Treatment of Hallux Valgus on Physiological Basis 593
- Fractures and Dislocations**
- HENDERSON, M. S.** Non Union in Fractures The Alvear Bone Graft 593
- DUNCAN, P.** The Operative Treatment of Acromioclavicular Dislocations 594
- DAVIS, G. G.** The Treatment of Dislocated Semilunar Carpal Bones 594
- DEJANET** Pseudarthrosis of the Neck of the Femur Osteoplastic Grafting, Cure 595
- WALKER** The Result of Suture of an Old Fracture of the Patella Followed by Suture of the Patellar Tendon Twenty-Two Years Later 595
- LAMBY, G.** Fracture of the Internal Head of the Tibia with Great Displacement, Osteosynthesis Early Walking 595
- Responsibility of the Surgeon in the After-Care of Fractured Bones 600
- GIFFIN, H. Z. and HARTER, S. P.** A Review of Professional Donors 599
- LEVY, F. W.** A Citrate Method of Blood Transfusion Designed to Maximize Post Transfusion Reactions 599
- CARRINGTON, G. L. and LEE, W. E.** Fatal Anaphylaxis Following Blood Transfusion 599
- PREVITTE, W. G. and TROTSKY, D.** Prolonged Intracranial Infusion and the Clinical Determination of Venous Pressure 599
- UNDERHILL, F. P. CARRINGTON, G. L. KAMINOW, R. PAGE, G. T.** and others Blood Concentration Changes in Extensive Superficial Burns and Their Significance for Systemic Treatment 603
- CATTELL, M.** Studies in Experimental Traumatic Shock VIII The Influence of Morphine on the Blood Pressure and Alkali Reserve in Traumatic Shock 608
- Lymph Vessels and Glands**
- MANN, G. D.** Elephantiasis A Clinical Review and an Attempt at Its Experimental Reproduction 600

SURGICAL TECHNIQUE

SURGERY OF BLOOD AND LYMPH SYSTEMS

- Blood Vessels**
- GERARDY, H.** Disease of Retinal Vessels and the Early Signs of Arteriosclerosis in the Eye 53
- HROVAT, F. MOSEV, D. M. and LEE, BROOK, R. K.** Methods of Demonstrating the Circulation in General as Applied to Study of the Renal Circulation in Particular 596
- KIMURA, E.** Anomalies of the Obturator Artery and Their Surgical Importance 596
- FINNEY, A.** The Use of Physiotherapy in Intermittent Claudication 597
- Blood and Transfusion**
- GOSS, H. L.** The Effect of Blood Transfusion on the Returns of Pettenecous Anemia 533
- MURRAY, H. A.** The Chemical Pathology of Pyknic Oedema in Relation to Tetany A Study of the Chloride, Carbon Dioxide, and Urea Concentrations in the Blood 590
- HARRISON, E. and SCHMIDT, H. R.** Blood and Serum Examinations Immediately Before and After Roentgen Irradiation 597
- GORD, H. Z. and HOLLAND, J. K.** Hemorrhagic Periton 597
- MARASCO** Hemorrhagic Complications Following the Use of Barium Salts 597
- PETERSON, M. F. and MILLER, C. A.** A New Method for Accurately Determining the Clotting Time of the Blood 597
- OSBURN, C. G. and HOCK, J. G.** On the Existence of More Than Four Iso-Agglutinin Groups in Human Blood 598
- Operative Surgery and Technique; Postoperative Treatment**
- GIBSON, J. W.** The Surgery of Harship and Cleft Palate Deformities 533
- MAXAM, P.** Double Union of One Nerve Trunk to Another 545
- BANKART, A. S. B. OFFNER, W. T. H., KIMMICK, G. LITTLE, E. M. and others.** A Discussion Regarding the Operative Treatment of Spastic Paralysis 546
- MARSH, J. C.** Postoperative Ventral Hernia 549
- REITH, M. E.** Diagnosis of Gastric Disease 549
- BALFOUR, D. C.** The Use of the Caustic in Peptic Ulcer 55
- JUDE, P. S. and RAYNER, F. W.** A Technique for the Resection of Gastric and Duodenal Ulcers 55
- DAVIDSON, H.** Retrograde Intussusception of the Small Intestine After Gastro Enterostomy 55
- KERR, H. H.** Intestinal Surgery 553
- P. VICKY, C. A.** The Technique of Axial Anastomosis of the Alimentary Canal 553
- LOQUET** A Procedure to Facilitate the Execution of the Connell Stitch 554
- HAYES, I.** A Modification of Lambert's Colostomy 558
- SEITZ, E.** The Care of the Stump After Cholecystectomy 563
- BANCOCK, W. W.** Resuscitation in Abdominal Surgery 568
- HADD, E. and HEIDENREICH, K.** Postoperative Adhesions Following Gynecological Laparotomies 57
- KRUL** Animal Experimentation in Anastomosing the Ureters into the Gall-Bladder in Extirpation of the Bladder 580
- JOSEPH, H.** Plastic Operations on the Male Urethra 58

- ALLEN, F. *Technique for Surgical Treatment, with Description of New and Improved Technique for the Operation* 584
- PARR, C. M. *Four Cases of Flexion Contracture of the Forearm Treated by Muscle-Volting Operation* 59
- CORONADO, P. D. *Plastic Transplantation for Quadriceps Paralysis* 59
- LYON, H. *The Operative Treatment of Hallux Valgus as a Physiological Basis* 593
- DRICOMBE, P. *The Operative Treatment of Acromioclavicular Dislocations* 594
- DAVIS, G. G. *The Treatment of Dislocated Semi-lunar Carpal Bones* 594
- LEWIS, F. W. *A Citrate Method of Blood Transfusion Derived to Minimize Post Transfusion Reactions* 599
- GERNET, L. *Autoplasty with the Use of Skin Flaps with Long Pedicles* 60
- KNOWLES, The Combined Physico-Surgical Treatment of Acid 601
- WOLFFKUTH, K. *Postoperative Tetanus Also Contribution to the Causality of Congenital Menstrual Defects and Extensive Reversion of the Small Intestine* 60
- KLOD, W. J. *Is Diphtheria Prophylactic Agent Against Postoperative Pulmonary Complications?* 60
- Antiseptic Surgery; Treatment of Wounds and Infections**
- CHERRY, R. C. *The Bactericidal Power of Argylol* 51
- UNDERHILL, F. P., CARRINGTON, O. L., KAPROW, R., PAGE, G. T. and others. *Blood Coagulation Changes in Extensive Superficial Burns and Their Significance for Systemic Treatment* 603
- CROFTON, M. *The Treatment of Tetanus* 603
- Anesthetics**
- LITTLEWOOD, J. A. *Local Anesthesia as a Means in Ocular Therapeutics I. the Process of Absorption under Nerve Control?* 53
- PHYSICO-CHEMICAL METHODS IN SURGERY**
- Röntgenology**
- THOMSON, S. C. *A Laryngeal Case Apparently of Epithelioma (Possibly Syphilis) Completely Healed and Arrested under X-Ray Treatment Without Operation* 533
- SARGENT, P. *Radiographic Localization of Spinal Lesions by Sievert's Method* 544
- STEWART, W. H. *Pulmonary Abscesses Radiographically Considered* 548
- SCHMIDT, T. and PREFFER, F. *Röntgenological Diagnosis of Carcinoma of the Tail of the Pancreas* 567
- FELL, K. *The Technique of Examination by Percutaneous Catheter* 568
- KIRBY, W. T. *Radiography of Closed Fallopian Tubes* 570
- ALPERIN, A. H. *Classification of the Uterus and Fallopian Tubes* 570
- STEIN, I. F. and ARLOS, R. A. *Röntgenograms of the Fetal Skeleton as a Positive Sign of Pregnancy* 573
- LEITCH, R. F. *The Value of Diagnostic X-Ray in Neoplasms of the Urinary Bladder* 574
- HICKFIELD, E., and SCHMIDT, H. E. *Mood and Serious Lesions Immediately Before and After Röntgen Irradiation* 597
- Radium**
- MACFARLAND, D. *Fibrosarcoma of the Nasopharynx Treated by Operation and Radium* 577
- DELMAN. *Cancer of the Neck of the Uterus Treated with Radium. Cure Maintained for Twelve Years* 578
- STUBBS, H. G. *Report of Cases of Malignant Growths of the Bladder Treated by Radium and Radium* 574
- Miscellaneous**
- S. ABELSON, F. *Physico-Chemical Investigations of Thyroid Problems* 574
- O'CONNOR, J. J. *Primary Carcinoma of the Female Uterine Report of Case Treated by Diathermy* 577
- FRANK, A. *The Use of Physiotherapy in Intermittent Claudication* 577
- KNOWLES. *The Combined Physico-Surgical Treatment of Acid* 601
- MAYO, W. J. *A Question of Size* 603
- CASTAÑO, C. A. and GÓMEZ, J. F. M. *The Results of Diathermy* 606
- MISCELLANEOUS**
- Chemical Entries—General Physiological Conditions**
- HOBSON, E. O. *A Comparative Study of the Basal Metabolism in Normal Men* 574
- REID, T. and CHA, H. T. *A Survey of Thyroid Enlargement Among the Children of Great Rapids* 574
- LOCHMISTEIN, H. *The Prevention of Goiter and Its Recurrence* 575
- SMITH, P. E. and SMITH, I. P. *The Function of the Lobes of the Hypophysis as Indicated by Replacement Therapy with Different Portions of the Ovary Gland* 574
- GLAER, E. *Microscopic Observations on the Ductal Pattern of Sebaceous Glands with the Formation of Nodules in the Breast* 577
- BECKER, I. E. *Tumors of the Breast* 577
- TELL, J. J. *Four Cases of Volvulus of the Small Intestine with Observations on the Etiology* 578
- STRAUCH, A. A. *Ulcerative Colitis* 578
- HOGAN, W. *Chronic Ulcerative Colitis and Its Treatment* 577
- KOLODY, A. *The First Reactions in Appendicitis and Cholecystitis* 577
- SA, R. H. J. *The Incidence of Malignant Disease in the Apparently Benign Enlargement of the Prostate* 578
- O'CONNOR, J. J. *Osteomyelitis* 578

BATTLES, E. Synovial Inflammation of the Tendon Sheaths of the Hands and Feet as an Occupational Disease		Surgical Pathology and Diagnosis	
COHEN, C. G. and HICK, J. G. On the Existence of More Than Four Iso Agglutinin Groups in Human Blood	588	HICOK, C. C. Observations upon the Phenolstet-muchlorophthalein Test for Liver Function	599
MASS, W. J. The Septic Factor in the Three Great Phages	598	HICOK, P. S. Salivary Urea and the Mercury Combining Power of Saliva: A New and Simple Index of Renal Insufficiency	577
ROSENBERG, W. M. F. Further Research on the Relation of Carcinoma to Infection	607	JONES, E. Difficulties in Estimating Surgical Insufficiency of the Kidney	578
CATTELL, M. Studies in Experimental Traumatic Shock. VIII. The Influence of Morphine on the Blood Pressure and Alkali Reserve in Traumatic Shock	608	MACCARTY, W. C. The Cytologic Diagnosis of Neoplasms	608
		Medical Jurisprudence	
		Responsibility of the Surgeon in Fractures	609

BIBLIOGRAPHY

Surgery of the Head and Neck

Head	6
Eye	6
Ear	680
Nose	6
Mouth	6
Throat	6
Neck	6

Surgery of the Nervous System

Brain and Its Coverings	6
Spinal Cord and Its Coverings	6 3
Peripheral Nerves	6 3
Sympathetic Nerves	6 3
Meningeal	6 3

Surgery of the Chest

Chest Wall and Breast	6 3
Trachea, Lungs, and Pleura	6 3
Heart and Pericardium	6 3
Esophagus and Mediastinum	6 3

Surgery of the Abdomen

Abdominal Wall and Peritoneum	6 14
Gastro-Intestinal Tract	6 4
Liver, Gall Bladder, Pancreas, and Spleen	6 5
Miscellaneous	6 6

Gynecology

Uterus	6 6
Adnexal and Per Uterine Conditions	6 7
External Genitalia	6 7
Miscellaneous	6 7

Obstetrics

Pregnancy and Its Complications	6 7
Labor and Its Complications	6 8
Puerperium and Its Complications	6 8

Newborn	6 8
Miscellaneous	6 8

Genito-Urinary Surgery

Adrenal, Kidney and Ureter	6 9
Bladder, Urethra, and Penis	6 9
Genital Organs	6 9
Miscellaneous	6 9

Surgery of the Bones, Joints, Muscles, Tendons

Conditions of the Bones, Joints, Muscles, Tendons	6 10
Surgery of the Bones, Joints, Muscles, Tendons	6
Fractures and Dislocations	6

Surgery of the Blood and Lymph Systems

Blood Vessels	6
Blood and Transfusion	6
Lymph Vessels and Glands	6

Surgery Technique

Operative Surgery and Technique	
Treatment	6
Antiseptic Surgery	
Treatment of Wounds and Infections	6
Anesthesia	6 3

Physico-Chemical Methods in Surgery

Röntgenology	6 3
Miscellaneous	6 3

Miscellaneous

Clinical Entries—General Physiological Conditions	6 3
General Bacterial, Mycotic, and Protozoan Infections	6 3
Surgical Pathology and Diagnosis	6 3
Medical Jurisprudence	6 3

EDITOR'S COMMENT

THE large number of excellent papers devoted to the surgery of the biliary tract which are reviewed in this month's issue of the *ABSTRACT* form an admirable and comprehensive symposium on this important subject. An experimental study by Specht on the effect of diet of varying amounts of fluid, and of various drugs on the secretion of bile (p. 559) and a discussion of the phenol-tetrachlorophthalate test of liver function by Higgins (p. 559) are of particular interest from a diagnostic standpoint. Two papers from German clinics, one by Robke (p. 560) and another by Dang-Chat (p. 561) on the effect of cholelithiasis and of cholecystectomy on gastric and duodenal motility and function emphasize the intimate relation between the gall bladder and intestinal tract and the importance of studying them and considering them as mutually dependent parts of a physiological unit rather than as distinct and isolated organs. Sherren's articles on stone in the hepatic and common ducts (p. 563) Moynihan's discussion of secondary operations on the biliary system (p. 565) and W. J. Mayo's address on the surgery of the hepatic and common bile ducts (p. 563) reflect the experience and conclusions of three of the world's ablest surgeons on the most difficult and critical aspect of the surgery of the biliary tract. Crile (p. 562) sums up the results of a large series of cases operated upon by himself and his associates, with particular reference to the indications for and results of different types of operations and Simon and Schlegel (p. 562) discuss the end results in a series of 318 cases.

Guthrie and Huck (p. 598) present a convincing study from the laboratories of the Johns Hopkins Hospital on the question of hitherto unrecognized

blood groups. They have identified eight different groups in the course of their investigations and believe there are still others as yet unrecognized. Their paper is of interest to every surgeon who is doing blood transfusion. Gilim and Hames (p. 590) in a brief paper, discuss the practical and interesting question of the effect of bleeding upon professional donors.

A number of abstracts in this month's issue are of especial interest to the genito-urinary surgeon. A discussion of renal tumors by Escudérot (p. 579) of the surgical treatment of diseases of the prostate by Judd (p. 582) of the complications of nephrectomy by Fromstein (p. 580) of the treatment of malignant growths of the bladder by Bugbee (p. 581), and of an improved method of treating seminal vesiculitis by Kidd (p. 584) are some of the subjects of particular importance.

Haug and Herdorfer's paper on postoperative adhesions following gynecological operations (p. 571) is of especial value since their conclusions are based on a series of 236 cases in which laparotomy was performed a second time. The interesting discussion of the diagnosis of tubal disease by Kennedy (p. 570) and Aldridge (p. 570)—in the first case with the aid of X-ray examination following intra uterine injection of sodium bromide and in the second with the help of air insufflation by Rubin's method—deserves careful consideration.

A brief review of an article by Voron, Michon, and Sedallian (p. 575) from the Chanté Hospital in Paris on the use of vaccino-therapy in puerperal infection is the forerunner of a number of reports on this subject that will appear in succeeding numbers.

INTERNATIONAL ABSTRACT OF SURGERY

DECEMBER, 1923

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Albee F H. Ununited Fractures of the Lower Jaw
With or Without Loss of Bone. *Surg Clin N*
Am 9:13, 10, 30

Albee gives an exhaustive résumé of the literature on maxillary and mandibular fractures from Hippocrates to the present time.

He emphasizes the necessity for teamwork between the surgeon and dentist.

The same principles that apply elsewhere in orthopedic work apply in fracture of the jaw. Accurate apposition of the fragments and immobilization until they have united are essential. No attempt should be made to sew the soft parts to close the gap until union of the fractured parts in correct relation is assured and permanent alveolitis has been adjusted. With the co-operation of the prosthetic dentist, an efficient interdental splint should be applied as soon after the injury as possible.

In extensive loss of bone difficult plastic surgical work is necessary. Pedicle flaps are not practical

because the bone cannot be molded accurately, and the graft is too thin. Several writers are quoted who claim that in mandibular pseudarthrosis the osteoperiosteal bone graft has not been successful. Chief among the causes of failure are the shaping of the graft with the mallet and chisel, the elapse of too much time between the cutting and application of the graft, and lack of dexterity.

The author uses a number of motor-driven tools of his own design and usually obtains the graft from the tibia or ilium. When there is loss of soft

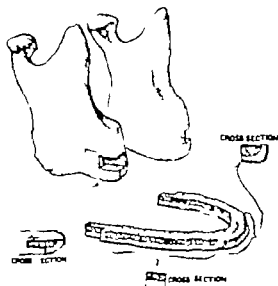


Fig. Showing the jaw fragments prepared for the reception of the large U-shaped graft from the wing of the ilium which restored the loss of substance in the lower jaw from the last molar on one side to the back of the last molar on the other. Not the shoulders which were cut in the ends of the graft to secure an accurate fit of the graft with the host fragments.

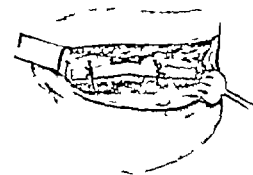


Fig. Showing the inlay bone graft in place held by kangaroo-tendon sutures. Not its slight angulation in contour which adapts it to the jaw fragments, restoring continuity of bone loss.

tissues, he always corrects this first by means of pedicle flaps, delaying the bone grafting until after the soft tissues have taken hold.

The general technique of the operation is described, and several cases are reported.

I. E. BARNOW, M.D.

ENT

Allport, F. Corneal Injuries in Industrial Occupations. *Illness M J* 19 3, 211-3.

The corneal injury most frequently seen in industrial work are due to small foreign bodies which are lodged in the cornea by the primary force or become rubbed.

Such bodies should be removed under strictly aseptic conditions, with local anesthesia, concentrated illumination, and the use of strong magnifying glasses. The location of the particle and its depth should be ascertained. It sticks lying loose can be wiped off with cotton applicator but those embedded must be removed with an instrument. In instrumental removal the following rules should be observed:

Get the instrument under the foreign body and lift it out.

Keep the injury of the cornea minimal.

Work in aseptic and concentrated illumination. Staining with fluorescein is of aid, especially when the particle is very small. The eschar often seen after the removal of foreign body should also be removed. Care must be taken not to mistake pigment spot on the iris for foreign body.

If the corneal injury is slight irrigation the use of 50 per cent alcohol and bichloride ointment, and observation for 24 or 48 hours are all that is necessary but if there is considerable corneal injury or if infection is present it is advisable greatly to cauterize the pathologic tissue with carbolic or when the infection is marked, use the waterless cotton swab round toothpick as a curette. In addition to the irrigation and the use of alcohol and ointment tropine should be instilled and padded (the eye) should be kept moist until the cornea is completely healed.

In cases of deep slow-growing ulcers followed by hypopyon, etc. search for external causes should be made. Syphilis, kidney lesions, diabetes, disease of the teeth, tonsils or sinuses, lachrymal disease are some of the important conditions to be looked for and corrected. The diet should be regulated as to overfeeding and about 100 gr of sodium chloride should be given every 2-4 hour-period. In the presence of trachoma, brushing the everted eyelids with boric acid powder 10 or three times a week is beneficial. Caustics are contraindicated. So called intense treatment three times a day may help. One drop of 1 per cent atropine should be dropped into the eye every five minutes six times, the solution being prevented from running into the nose by pressure on the tear duct. In the meantime heat as strong as bearable should be

applied. At the end of the half hour period, drops strong enough to produce an exudate of the conjunctiva—beginning with a 5 per cent solution and increasing, as necessary to the powder—should be used. From ten to fifteen minutes later the treatment should be completed with the use of atropine and mercurial ointment. In some cases of hypopyon the anterior chamber must be opened and washed out. Occasionally, in spite of treatment, the eye is lost because of general panophthalmitis, and enucleation becomes necessary.

The author does not use the actual electric cautery as much today as formerly because of the ease of perforation. Price's protractor and subconjunctival injections of bichloride, salt, cocaine, alkali, etc. he has found disappointing.

MATTHEW R. WALSH, M.D.

Driver, W. E. The Growing Importance of Mapping Fields of Vision. *Surgeon M Month* 1923, 1, 295.

Mapping of the fields of vision, done with painstaking care, will be of great aid in diagnosis and in the decision as to the type of treatment. It is necessary to map out not only the form fields, but also the color fields and blind spots. Frequently these give early evidence of organic lesions.

THOMAS D. ALLEN, M.D.

Haffer, J. H. The Surgical Anatomy of the Lachrymal Sac. *Am J Ophth* 19 3, 324, 363.

The author describes in considerable detail the bony framework and the muscular and ligamentous coverings of the lachrymal sac and then discusses some of the difficulties that confront the surgeon in doing an enucleation. The two most important difficulties are the locating of the sac and the control of hemorrhage. A skin incision is described which permits access to the sac without section of certain surrounding blood vessels. The difference in the appearance of the lachrymal fascia and the lachrymal sac is largely a difference of color; the former is white and the latter bluish. Great care should be taken not to enter the orbit.

THOMAS D. ALLEN, M.D.

Peter, L. C. Slit Lamp Studies of Herbs of the Vitreous. Its Relation to Cataract Operations. *Am J Ophth* 9 3, 3 124, 644.

This article is based on slit lamp studies of herms of the vitreous following the extraction or spontaneous absorption of cataracts. In two cases of traumatic cataract the vitreous could be seen prolapsed into the anterior chamber. Four cases of herms of the vitreous are reported (one in detail) and four cases of traction, two of which were operated upon by Barraquer, one by Smith, and one by the author by the Smith method.

While the external appearance of the eye operated upon by the Barraquer method was perfect, the slit lamp revealed herms of the vitreous and many opacities. In the cases operated upon by the Smith method the external appearance was poor but the

lens was not tremulous and the internal conditions were good. The author believes that although discussion has been done for years, the possible damage to the vitreous is greater than has been suspected.

VINCENT WESCOTT, M.D.

Killick, C. A Series of 100 Cases of Cataract Removed under Subconjunctival Bridge. *Brit J Ophth* 9 3 2, 330

Influenced by the work of Terrien and by marked loss of vitreous in two successive cases in his own practice the author changed his technique in cataract extractions to the use of a subconjunctival bridge.

The method was advocated by Desmarres in 1855 but was later abandoned even by its originator. In 1898 Panzer and in 1900, Vacher revived it but it was not generally accepted. More recently, Björk, Lundgaard, and Credland have advocated it. All have reported very excellent results especially as to complicating infections, reversionment of the corneal flap, and the loss of vitreous but admit that it is somewhat difficult.

The author's method is copied from that of Terrien whose technique was very similar to that of Desmarres. The incision is made with puncture and counterpuncture to the limbus and the section is completed with a conjunctival flap which is not cut through but left as a bridge. This bridge arises in width the average width is about 4 mm. When the section has been completed the flap is turned backward and made to glide beneath the conjunctiva as far as possible, as the longer the bridge the easier the extraction and the broader the bridge the better the coaptation of the wound lips. Care must be taken to keep the knife edge from touching the speculum. The ordinary technique is then followed except that everything is done subconjunctivally. If the combined extraction is performed the author prefers the inner side of the right eye for the cornea and the outer side of the left eye. In selected cases simple extraction is preferred.

After the capsule has been opened with cystotome the ease of the extraction depends upon the kind of lens and, to a great extent, upon the bridge. Depressing the upper lip of the wound with the spatula to assist in the delivery of the lens is unnecessary as the simple pressure is sufficient. As the bridge will not permit overexposure of the wound considerable pressure may be exerted. After the lens has been lifted gentle guidance upward and laterally is all that is necessary. Once in while division of the bridge may be indicated. The operation is concluded in the usual way by smoothing out the iris and instilling tropine in cases of iridectomy and cocaine in the others. A simple or bilateral pad is applied and the patient allowed to walk by himself in his room from the operating room. At the end of twenty-four hours, the eye is examined and the dressings are changed. The patient is allowed to get up from the bed after four hours and three days and goes to his home on the fifth, sixth, or seventh day.

The advantages of the operation are that it safeguards against infection and loss of vitreous and that the surgeon has complete control of the eye when the bridge has been fashioned. The disadvantages are that the bridge constitutes a complication and makes the operation less easy. In none of the author's cases was there delayed healing, excessive hemorrhage into the anterior chamber or prolapse of the iris.

The one contra-indication to the operation is narrow palpebral fissure for a fully ripe cataract of the ordinary type it is almost ideal.

MANFORD R. WALTZ, M.D.

Lippincott, J. A. Local Anesthesia an Adjuvant in Ocular Therapeutics. I. The Process of Absorption under Nerve Control? *Am J Ophth* 9 3 3 2, 63

Lippincott reports two cases in which the pupil failed to dilate in the presence of corneal ulceration until, in one case the mydriatic was heated to the boiling point and in the other the cornea was anesthetized with cocaine before the installation of tropine. He reports also five of a series of cases in which he used a non-mydriatic anesthetic in one eye before instilling a mydriatic in both eyes. The pupil dilated more quickly and to a greater extent in the anesthetized eye. In other cases the pupil was dilated with dromin and a non-mydriatic anesthetic was used in one eye.

VINCENT WESCOTT, M.D.

Cheney, R. C. The Bactericidal Power of Argrol. *Am J Ophth* 9 3 3 643

The author found by experiments that argrol is most effective as a bactericidal agent when the bacteria are well separated and is least effective when they are clumped together and surrounded by mucus or pus.

Silver nitrate was found more effective than argrol.

VINCENT WESCOTT, M.D.

Grimesdale, H. Diseases of the Retinal Vessels and the Early Signs of Arteriosclerosis. *The J. Med. Press* 9 3 1914

The large number of physiological variations in the fundus oculi must not be mistaken for pathological changes. Pulsation of the veins occurs in normal persons but pulsation of the arteries indicates general disease such as aortic insufficiency or local disease such as glaucoma. The arteries dilate in systole of the ventricles while the veins enlarge just before a systole.

The condition of the retinal vessels as seen with the ophthalmoscope is a good indication of the condition of the cerebral vessels. The author divides arterial changes into two groups: those due to increased blood pressure and those due to arteriosclerosis. He believes that retinal hemorrhage is a sign of general disease of the blood, and that embolism or thrombosis is due to patchy arteriosclerosis.

VINCENT WESCOTT, M.D.

Goss, H. L. The Effect of Blood Transfusion on the Retinitis of Pernicious Anemia. *Am J Ophth* 93:3 viii, 66

Goss draws the following conclusions:

1. Transfusion does not prevent the further occurrence of hemorrhages in the retina.
2. Transfusion does not cause the retinal hemorrhages to become absorbed any more rapidly.
3. The remotest effect of the transfusion is gradual lessening of the retinal edema and decrease in the tendency toward hemorrhage.
4. No change occurs in the retina as an immediate effect of transfusion. THOMAS D. ALLER, M.D.

EAR

Moffison, W. M. A Case of Vertigo Cured by Opening the External Semicircular Canal. *Proc Roy Soc Med Lond* 93 xvi Sect Otol 60

The author reports a case of giddiness and tinnitus in a man aged 43 years which was relieved by opening the semicircular canal. The onset of the giddiness was sudden and the attacks occurred at frequent intervals.

Examination of the ears showed normal membranes. In the right ear the hearing was good, but in the left ear almost absent. There was no spontaneous nystagmus. The caloric responses on both sides were sluggish. Post-ponting was good on the right side and absent on the left side. Four weeks after the opening of the left semicircular canal the patient was entirely free from vertigo and could hear whisper at distance of 8 ft from the left ear. Six weeks later the affected ear was found to be deaf.

The operation was performed by opening the mastoid exactly as in an ordinary mastoidectomy well exposing the aditus region to obtain a good view of the external semicircular canal, and then chipping the canal open. JAMES C. BRADWELL, M.D.

Hubert, L. A Study of the Mechanism of Pain as Seen in Otolological Cases. *Laryngoscope*, 93, xxxii, 596

The author divides pain in otological cases in three types viz. somatic, autonomic, and psychic.

Somatic pain is caused by irritation of the pain sense organs or the pain nerve fibers of the ear or by irritation of those nerves or closely related nerves distributed to structures some distance from the ear. In the latter instance there is no disease of the ear proper, but only pain in front within, or behind the ear. In some cases somatic pain may be due to involvement of the sensory ganglia which supply the ear with sensation.

The presence of autonomic pain in or around the ear has not yet been definitely proved. Its existence will depend upon whether or not afferent autonomic fibers are present in the nose, nasopharynx, and buccal cavity.

Psychic pain has its origin in the cerebrum and is referred to the ear especially to the mastoid region. JAMES C. BRADWELL, M.D.

NOSE

MacPherson, D. Fibrosarcoma of the Nasopharynx Treated by Operation and Radium. *Laryngoscope*, 93 xxxii, 653

MacPherson reports a case of fibrosarcoma of the nasopharynx in which the swelling extended over the antrum and completely blocked the right side of the nose. The growth was within the antrum but attached to it by only small fibrous trabeculae which were easily broken down by the finger. Its site of origin was the lateral wall of the pharynx and the sphenoid base. It was removed from its attachment by the anterior route of the antrum. The operation was unable to remove its base as it was very firmly attached and the operation was very bloody. The loss of blood necessitated the intravenous administration of saline solution. In the future MacPherson will tie the carotid before attempting an operation of this type.

After the operation approximately 0.000 mgrs. hrs. of radium treatment was given.

One year later the author found a recurrence in the nasopharynx, but he believes that the growth will be controlled by the use of radium.

JAMES C. BRADWELL, M.D.

Loftus, J. E. Cerebrospinal Rhinorrhoea, 11th the Report of Case. *Laryngoscope*, 93, xxxii, 67

Cerebrospinal rhinorrhoea is a rare affection which is characterized by the escape of cerebrospinal fluid into the nose. The literature reports twenty-three cases, the first was described by King in 1834.

The etiology is obscure. The author is of the opinion that there is congenital defect in the base of the skull and that the embryonic canal may be forced open by sneezing or coughing, direct communication being thus established between the roof of the nose and the third ventricle.

The chief symptom is the dripping of clear watery fluid from the nose. This may be intermittent, occurring daily or monthly. It is most rapid when the head is in the upright position and the amount is increased when the patient strains or becomes excited. Usually there are associated symptoms and symptoms of intracranial pressure.

The diagnosis is based on the dripping from the nose and an examination of the fluid. The fluid is free from taste, smell, and sediment. It contains albumin and globulin in small amounts and substance which reduces Fehling's solution. Its specific gravity is low.

The prognosis is unfavorable as the condition is usually fatal. There are only two cases on record in which an apparent cure was obtained.

Nothing can be done in the way of treatment. It is not only useless, but even harmful, to check the flow of the fluid. Nasal treatment is contra-indicated. Lumbar puncture has proved unsuccessful.

The author reports in detail case of cerebrospinal rhinorrhoea in a woman 40 years of age. JAMES C. BRADWELL, M.D.

MOUTH

Gibson, J. W.: The Surgery of Harelip and Cleft Palate Deformities. *South M & S* 9 3, 1934, 155

Harelip and cleft-palate deformities interfere seriously with deglutition and general development. Therefore, operation is followed by marked improvement in the general health as well as in the subject's appearance.

Embryologically the closure of the lip and palate proceeds from front to back: the lip first, then the alveolus, then the hard palate, and finally the soft palate. By the eleventh week intra-uterine life, the union of the parts forming the lip, alveolus, and palate is usually complete.

The author believes that if the general condition is satisfactory harelip should be repaired before the child is 3 months old, and that the bone repair should be completed at the ninth or tenth month. This is in accord with the views held by Berry, New, Richis, Thompson, Roberts, Davis, and others, but contrary to the opinion of Brophy and Blair who believe that the alveolus should be operated upon early.

The general principles underlying harelip and cleft-palate surgery are the maintenance of an adequate blood supply and the prevention of tension on the sutures and scars. In operations on the lip the most important points are the prevention of notching, the correction of the widening of the nostrils, and the care of the premaxilla in bilateral clefts.

In the author's opinion, the palate should be operated upon, if possible, at about the eighth or ninth month, and certainly before the child begins to talk.

WILLIAM B. STARR, M.D.

Rhein, M. L.: The Present Status of the Pulp and Root Canal Problem. *N. York M J & Med Rec* 9 3, 1934, 148

The author gives a brief historical review of the history of the dental profession and the root canal problem, pointing out the fact that, in the past, the importance of perfect asepsis and the elimination of infection was not appreciated, and that even today the general practitioner is not treating root canals properly. One explanation is economic one, as proper treatment requires a great deal of time for the careful removal in a perfectly sterile field, of every particle of pulp tissue and for perfect filling of the root canal and roentgenograms to check up the progress and results. This renders the expense almost prohibitory to the average person. The only solution may be to refer all root canal operations to the specialist.

The percentage of failure depends upon many conditions, but in the absence of infection a successful result should be obtained in 95 per cent of the cases. When only the pulp is infected and the pericementum is intact, a successful result should be obtained in 80 per cent of the cases. When the pericementum has been destroyed by infection or when previous treatment has failed, the wise operator will

refuse to attempt further treatment, although in a small percentage of cases there is some chance of success.

CHARLES W. FREEMAN, D.D.S.

THROAT

New, G. B.: Congenital Obstruction of the Larynx and Pharynx. *J Am M Ass* 9 3, 1934, 363

Six cases illustrating different types of congenital obstruction of the larynx and pharynx, a rare condition, are reported. This condition may be due to various causes. One common symptom, respiratory obstruction in the newborn infant, was present in all, and formed the basis for the study.

CASE 1: Congenital laryngeal stridor in a boy 8 weeks old. The laryngeal obstruction was due to the approximation on inspiration of the aryepiglottic folds. The condition did not demand treatment and the child gradually improved.

CASE 2: Congenital middle line or bilateral abductor position of the true cords in a mentally deficient child 1 month old. The obstruction did not require immediate treatment and gradually decreased.

CASE 3: Subglottic laryngeal diaphragm in a child 1 year old. The tracheotomy tube was removed about one year from the time of the original examination, and as no obstruction followed treatment was considered unnecessary.

CASE 4: Angioma of the larynx in a child 9 months old. The angioma cleared up under radium treatment.

CASE 5: Lingual thyroid in a boy 3½ months old. The typical tumor was found at the base of the tongue. The obstruction was not sufficiently marked to require treatment.

CASE 6: Congenital flaccid tongue and palate in a child 1 month and 3 weeks old. The child could not eat or sleep. On inspiration the tongue was sucked back against the posterior pharyngeal wall, causing partial obstruction, and expiration the neck ballooned up as the soft palate and tongue approximated. The opening was maintained in the pharynx by the use of a piece of curved celluloid, and the child gradually improved. Ultimately the celluloid appliance was discarded.

No cases were found reported in the literature similar to Cases 2 and 6. It is assumed, therefore, that two additional types of the condition are described in this report.

O. B. N. W. M.D.

Thompson, St. C.: A Laryngeal Case Apparently of Epithelioma (Possibly Syphilis) Completely Healed and Arrested under X-Ray Treatment Without Operation. *Proc Roy Soc Med Lond* 9 3, 1934, Sect Laryngol 60

The case reported was that of a man 68 years old. Macroscopic examination showed the growth to be an epithelioma. Operation was refused because of the extension of the neoplasm and the patient's age.

The radiation employed was the most penetrating which a 6-in. coil would yield, increasing up to a 20-in. spark and approximately from 150,000 to

150,000 olts. The filtration was 8 mm of aluminum and a pad on the skin. Twice a week for a month full dose of the rays was directed to the larynx, first from the left side and then from the right side. Subsequently this was repeated at fortnightly intervals for several months. Altogether twenty hours of exposure are given from January to November.

OTTO M. ROTT, M.D.

NECK

Ifebeon, F. G. A Comparative Study of the Basal Metabolism in Normal Men. *Quart J Med* 1913, xvi, 383.

Fifty-one male subjects are examined in an attempt to establish a base line for the basal metabolism of normal persons. A very careful check was made on these subjects to establish their normality in relation to their weight, their physical fitness as judged by their vital capacity and pulse response to exercise, the haemoglobin content of the blood, the blood pressure, the respiratory rate, and the pulse rate while they were lying down. The examinations were made in the post-absorptive state, twelve to fourteen hours after the last meal and after a rest of one to one and a half hours following the walk or bicycle ride to the office; they were made at room temperature between 6 to 20 degrees C. and when the temperature by mouth was normal. Five of the fifty-one males were rejected as not normal.

The metabolism was calculated by three methods, those of Benedict, DuBois, and Dreyer and the calculated normal weight was used as well as the actual weight at the time of the experiment. The subjects ranged in age from 9 to 40 years. Most of them were school boys, students, professors, doctors, and laboratory workers.

The conclusions drawn from this investigation were as follows:

Dreyer's formula, $\frac{Wn}{C \times A^{0.7333}} = K$, being approximately 0.5 and K equalling 0.015 in males, expresses the basal metabolism in an extremely satisfactory manner over a wide range of body size and age.

1. A definite and important improvement between calculation and observation is obtained when the calculated normal weight is used for purposes of calculation instead of the observed weight.

2. Healthy persons whose observed weight differs from their calculated weight may have a metabolism which is entirely normal, considered in relation to their calculated or normal weight.

3. From both theoretical and practical standpoints the calculated weight should be employed in calculating the normal basal metabolism.

4. For persons leading healthy active life with opportunities for physical recreation, the K in Dreyer's formula will be found equal to approximately 0.009 instead of 0.01.

5. Dreyer's formula is highly satisfactory from both theoretical and practical standpoints. It is

an improvement upon the methods of Benedict and DuBois in that it holds true over a wider range of age and weight with greater accuracy and is based upon sounder principles.

MARION H. HENRY, M.D.

Starlinger, F. J. Physico-Chemical Investigations of Thyroid Problems (Physikalisch-chemische Untersuchungen von Schilddrüsenerkrankungen). *Monatsschrift f. Med. Chem.* 1914, xxxv, 314.

As the existence of specific internal secretion of the thyroid has not yet been proved, the author studied the blood plasma which, during its passage through the thyroid, would come into closest contact with the hypothetical secretion. All previous studies have been made on the peripheral blood, but of course, show no purely thyroid hormone action.

Physico-chemical examination revealed differences in diffusion in the plasma from the thyroid veins and arteries in the sense that in the vast majority of cases the arterial plasma seemed to diffuse less readily than the venous plasma. In smaller percentage of the cases the findings were just the reverse. Changes in diffusion of the first type indicate clinically morphologically and physico-chemically a greater of hyperfunction, while the lowering of diffusion in the venous plasma is characteristic of greater of hypofunction. On these grounds the function of the thyroid is conceived to be the breaking down of highly complex protein molecules and the giving off of protein derivatives into the blood stream. The occurrence and degree of this breaking down process is dependent upon an energetic catalytic agent which does not injure the gland. A specific secretion in stronger sense is to be denied. The overworking of this function leads to functional hypertrophy and ultimately to the formation of a goiter.

On the basis of this working hypothesis various factors regarded clinically and experimentally as predisposing are explained. The assumption of specific exogenous toxin for an entire class of goiters seems superfluous. The causes are various endogenous, physiological, and pathological processes which have as common characteristic long-continued increase of fibrinogen in the plasma.

HANES (2)

Reed, T. and Clay H. T. A Survey of Thyroid Enlargement Among the Children of Grand Rapids. *J. Michigan State M. Soc.* 1913, xii, 151.

In a survey of the school children of Grand Rapids numbering 20,735, enlargement of the thyroid gland was found in 30 per cent. Thirty per cent of those affected were boys and 67 per cent were girls. The examination consisted of inspection and careful palpation of the thyroid gland, and the application of the swallowing test. The enlargement was graded 1, 2, 3, or 4 according to its extent. Cases of distinct adenomas were graded 5.

The frequency of thyroid enlargement was rather high among high school children ranging from 25 to 60 per cent in different schools. Two and one half

times as many girls as boys were found to have a thyroid tumor. The incidence of the condition increased in both sexes from the fifth to the fourteenth year of age. The changes at puberty are perhaps accountable in part for the higher incidence in girls. No cases of exophthalmic goiter were discovered.

While only slight enlargements were found in boys, the disease is more frequent among boys than is generally supposed. The routine administration of 10 mgm. of iodine has been urged by the health authorities as a preventive measure.

WILLIAM J. PICKETT, M.D.

Eggenberger H. The Prevention of Goiter and Its Recurrence (Die Verhütung des Kropfes und des Kropfrecidives). *Schweiz. med. Wochenschr.* 9:3, 1913, 245.

In the etiology of goiter a deficiency of iodine plays an important rôle. Iodine undergoes slow metabolism in the organism. Eggenberger estimates this to be .000 gm. daily. The thyroid is an iodine reservoir and iodine is an indispensable inorganic constituent of food. Goiter and cretinism must be regarded as diseases of the thyroid gland due to iodine deficiency. Even minute doses of iodine (one drop of $\frac{1}{2}$ per cent solution of potassium iodide daily) given over a long period of time have a prophylactic action. Iodine occurs everywhere in nature in minute quantities chemically difficult to detect. The air and water contain greater quantities the closer the sea is approached. In enclosed areas the iodine content of the air is less than in open areas, as iodine is absorbed by man and by objects. Plants and animal bodies are rich in iodine. Of foodstuffs eggs, green vegetables and salt water fish are particularly rich in iodine. In general, goiter-free regions are one in which there is a surplus of iodine. In Alpine regions there is very little iodine in the water. The small thyroid glands of goiter-free regions contain more iodine than the large ones of goitrous regions. Iodine is best given artificially by adding potassium iodide to the table salt.

In the discussion of this article Hemmichen emphasized the fact that not all goiters respond to iodine. Some respond much better to calcium chloride, bromine, or silicic acid. Magnesium silicate, calcium lactate, and sodium bromide have proved effective in the treatment of soft goiters and also decrease the size of large goiters. Kozono (Z).

Bertler A. E. The Nature and Treatment of Interstitial Goiter. *Nebraska State M. J.* 9:3, 1914, 26.

Persons with interstitial goiter are nervous and irritable, lose weight and sleep, and suffer with tachycardia and flushing. The pathologic changes in this condition are characterized by an increase in the interstitial cells, flattening of the acini, and a change in the colloid. Function is impaired. The gland somewhat resembles the thyroid at the fourth or fifth year of age.

In an adolescent goiter there is merely an increase in colloid and no change in the cells. In an adenoma there is an increase in epithelium. In secondary degeneration of colloid goiter the colloid shows different degeneration and the cells are frankly trophic.

Interstitial goiter is most common between the eighteenth and thirtieth years of age. The subjects are usually tall slender girls who become fatigued easily. The metabolic rate is not increased, and eye signs are uncommon. The gland is usually small and somewhat tender. Tuberculosis can be differentiated by the Goetsch test.

As a rule operation does not give permanently satisfactory results because function is decreased. The author therefore operates only when the gland is very large. He gives bromides to relieve the nervousness and sleeplessness, and iodides to stimulate the gland. Improvement requires many months.

Persons with interstitial goiter should be examined carefully for other pathologic conditions. A large number of them will be found to have pelvic disorder.

MANCINI H. H. BART, M.D.

Willros, F. A., Boothby M. W. and Wilson L. B. The Heart in Exophthalmic Goiter and Adenoma with Hyperthyroidism, with Notes on the Pathology. *Med. Cl. N. Am.* 9:3, vii, 89.

Much of the confusion with regard to the cause as well as the treatment of the cardiac phenomena of exophthalmic goiter and of adenomatous goiter with hyperthyroidism has been due, first, to imperfect knowledge of the symptoms characterizing these diseases, which result from improper increased activity of the thyroid gland, and second, to failure to differentiate them from more or less similar syndromes such as cardiac neurosis, the irritable heart of soldiers, disordered action of the heart, and neuro-circulatory asthenia, which are not attributable to improper functioning of the thyroid gland.

Exophthalmic goiter is a constitutional disease due apparently to an excessive, and probably abnormal, secretion of an enlarged thyroid gland showing, pathologically, diffuse parenchymatous hypertrophy and hyperplasia. It is characterized by an increased basal metabolic rate with resulting secondary manifestations, a peculiar nervous syndrome, and, usually, exophthalmos and tendency to gastro-intestinal crises of vomiting and diarrhea. The cause of the pathologic process and activity of the thyroid gland is not known.

Adenomatous goiter with hyperthyroidism is constitutional disease due to the presence in the thyroid gland of a denomatous tumor which, by maintaining an abnormally high and unregulated concentration of thyroxin within the body, causes an increased basal metabolic rate with resulting secondary manifestations.

The most outstanding fact shown by the data presented in this article is the infrequency in both exophthalmic goiter and adenoma with hyperthyroidism of symptoms indicating cardiac disease.

150,000 volts. The filtration was 8 mm of aluminium and a pad on the skin. Twice a week for a month a full dose of the rays was directed to the larynx, first from the left side and then from the right side. Subsequently this was repeated fortnightly intervals for several months. Altogether twenty hours of exposure were given from January to November.

Otto M. Rott, M.D.

NECK

Hobson F. G. A Comparative Study of the Basal Metabolism in Normal Men. (*Quart. J. Med.* 923 271, 363)

Fifty-one male subjects were examined in an attempt to establish a base line for the basal metabolism of normal persons. A very careful check was made on these subjects to establish their normality in relation to their weight, their physical fitness as judged by their vital capacity and pulse response to exercise, the haemoglobin content of the blood, the blood pressure, the respiratory rate, and the pulse rate while they were lying down. The examinations were made in the post-absorptive state, twelve to fourteen hours after the last meal and after rest of one to one and a half hours following the walk or bicycle ride to the office, they were made at room temperature between 6 to 20 degrees C and when the temperature by mouth was normal. Five of the fifty-one males were rejected as not normal.

The metabolism was calculated by three methods, those of Benedict, DuBois, and Dreyer and the calculated normal weight was used as well as the actual weight at the time of the experiment. The subjects ranged in age from 9 to 40 years. Most of them were school boys, students, professors, doctors, and laboratory workers.

The conclusions drawn from this investigation were as follows:

Dreyer's formula, $\frac{Wn}{CXA} = K$, being approximately 5 and K equalling 10.5 in males, expresses the basal metabolism in an extremely satisfactory manner over wide range of body size and age.

A definite and important improvement between calculation and observation is obtained when the calculated normal weight is used for purposes of calculation instead of the observed weight.

3. Healthy persons whose observed weight differs from their calculated weight may have metabolism which is entirely normal, considered in relation to their calculated or normal weight.

4. From both theoretical and practical standpoints the calculated weight should be employed in calculating the normal basal metabolism.

5. For persons leading healthy active lives with opportunities for physical recreation the K in Dreyer's formula will be found equal to approximately 10.5 instead of 5.

6. Dreyer's formula is highly satisfactory from both theoretical and practical standpoints. It is

an improvement upon the methods of Benedict and DuBois in that it holds true over a wider range of age and weight with greater accuracy and is based upon sounder principles.

Alanson H. Howard, M.D.

Starlinger F. Physico-Chemical Investigations of Thyroid Problems (Physikalisch-chemische Untersuchungen zum Schilddrüsensproblem). *Mitt. d. Gesellsch. d. Med. u. Chem.* 1923, xxxvi, 334

As the existence of a specific internal secretion of the thyroid has not yet been proved, the author studied the blood plasma which, during its passage through the thyroid, would come in closest contact with the hypothetical secretion. All previous studies have been made on the peripheral blood which, of course, shows no purely thyroid hormone action.

Physico-chemical examination revealed differences in diffusion in the plasma from the thyroid veins and arteries in the sense that in the vast majority of cases the arterial plasma seemed to diffuse less readily than the venous plasma. In a smaller percentage of the cases the findings were just the reverse. Changes in diffusion of the first type indicate clinically morphologically and physico-chemically a greater of hyperfunction while the lowering of diffusion in the venous plasma is characteristic of greater of hypofunction. On these grounds the function of the thyroid is conceived to be the breaking down of highly complex protein molecules and the giving off of protein derivatives into the blood stream. The occurrence and degree of this breaking down process is dependent upon an energetic catalytic agent which does not injure the gland. A specific secretion in a stronger sense is to be denied. The overworking of this function leads to functional hypertrophy and ultimately to the formation of goiter.

On the basis of this working hypothesis various factors regarded clinically and experimentally as predisposing are explained. The assumption of a specific endogenous toxin for an entire class of goiters seems superfluous. The causes are various endogenous, physiological, and pathological processes which have as common characteristic long-continued increase of fibrinogen in the plasma.

HANES (2)

Reed, T. and Clay H. T. A Survey of Thyroid Enlargement Among the Children of Grand Rapids. *J. Michigan State M. Soc.* 1923, xxi, 33

In a survey of the school children of Grand Rapids, numbering 26,545, enlargement of the thyroid gland was found in 30 per cent. Thirty per cent of those affected were boys and 67 per cent were girls. The examination consisted of inspection and careful palpation of the thyroid gland and the application of the swallowing test. The enlargement was graded 1, 2, or 3 according to its extent. Cases of distinct disease were graded 3.

The frequency of thyroid enlargement was rather high among high school children, ranging from 30 to 60 per cent in different schools. Two and one half

in sixteen. In two instances the heart weighed 500 gm and 550 gm respectively. Both of these hearts were in large females, one with exophthalmic goiter and the other with nodular goiter associated with an acute terminal fibrous pericarditis. In the other cases the hypertrophy equalled a 5 to 10 per cent increase in weight. In two of the hypertrophied hearts fibrosis was present.

Eleven of the sixteen patients with hypertrophy of the heart were past 45 years of age. One was 35, one 35, and one 38 years old. Ten of the sixteen hypertrophied hearts showed distinct dilatation as well as hypertrophy.

No note appears in the autopsy findings concerning dilatation or hypertrophy of the heart in the other five cases except that in one the heart weighed 50 gm and was firm and beefy in texture. As is usual in exophthalmic goiter the hearts in autopsy are mostly pale, soft and somewhat dilated.

Histologically the myocardium in eighteen cases showed apparently swollen fibers with indistinct striations and well marked lipoid changes. However only five of the patients whose hearts were examined were under 40 years of age. It is difficult, therefore, accurately to determine whether the lipoid changes are greater than might have been expected in persons more than 40 years of age and without exophthalmic goiter but it is apparently true that in persons with long-continued, pronounced hyperthyroidism the myocardium reveals more advanced fat changes than is present in the myocardium of persons of the same age without hyperthyroidism.

The impression of these hearts gained by the pathologist from both gross and microscopic examination is that of weak rather than strong muscles, although it appears from this series of cases that a large proportion of them show muscular hypertrophy.

W. M. BOONES, M.D.

Anstett, R. C. Surgical Indications in Goiter. *Ochs State M. J.* 9, 3, xix, 557.

Histologically the three variations from the normal thyroid are (1) an increase in intra-alveolar colloid, (2) the development of new alveoli, and (3) hypertrophy of the alveolar epithelium. These variations form the basis of the three main types of goiter: (1) the colloid goiter, (2) the adenomatous goiter, and (3) the exophthalmic goiter. All other types are variations or combinations.

The colloid type of goiter is seen most often in girls between the ages of 5 and 8 years. There is symmetrical enlargement of both lobes and the isthmus, and the gland is soft and smooth. Operation is arranged only by pressure symptoms or for cosmetic reasons. The adolescent type usually disappears before the twenty-fifth year of age.

The colloid goiter is an expression of deficiency in the amount of iodine available to the thyroid. Marine has shown that the administration of iodine often prevents or even cures colloid goiter and he and Kimball believe that 1 gm of sodium iodide given in 100 cc daily does twice a year are sufficient.

The adenomatous type of goiter is most common in the third and fourth decades of life. Examination reveals single or multiple firm masses. The symptoms due to non-toxic adenomata are purely mechanical. Toxic adenomata cause, in addition, increasing nervousness, tachycardia, dyspnea, palpitation, tremor, weight loss, easy fatigue, hypertension, increased perspiration, and increased appetite. The wave of intoxication ascends progressively without the remissions which occur in exophthalmic goiter.

Plummer observed that the adenomatous type of goiter appears at the average age of 35 years and comes for treatment nineteen years and five months later after the symptoms have been noted for two years and five months. The treatment is surgical if the adenoma is 3 cm or more in diameter. Ligations are of no benefit.

Exophthalmic goiter may occur at any age, but is most common in the third and fourth decades. The course of the symptoms is somewhat acute, reaching a maximum twenty or thirty days after the onset of the disease at an average period of nine to twelve months from the time of their onset.

In the order of their onset the symptoms are nervousness, motor disturbances, tremor, increased appetite, tachycardia, loss of strength, cardiac insufficiency, exophthalmos, loss of weight, diarrhea, vomiting, and mental depression.

Examination reveals a firm symmetrical enlargement and, in 80 to 90 per cent of the cases, bruits over the thyroid vessels. The onset of hyperthyroidism in exophthalmic goiter is rapid and rather acute, while in the toxic adenoma it is slow and insidious. Nervous symptoms predominate in the former and cardiovascular symptoms in the latter type. In toxic adenoma there may be stare but exophthalmos is absent.

The best results in cases of exophthalmic goiter are obtained from early operation, but surgical treatment should not be given just before, during, or immediately after a crisis.

In mildly or moderately toxic cases in which the average metabolic rate is about 50 per cent, partial thyroidectomy may be performed. If the patient is markedly toxic, preliminary ligation followed by secondary ligation should be done. After about three months thyroidectomy may be performed safely.

While the majority of thyroidectomized patients have an uneventful convalescence, there is occasionally a postoperative reaction characterized by a rise in the temperature from 1.3 to 1.5 degrees F and an extremely rapid pulse. In such cases the temperature is controlled by the application of ice bags, and sufficient morphine is given to keep the patient at mental and physical rest. A hypodermoclysis of 4000 ccm of saline solution is administered twice daily. Blood transfusions give striking results.

Malignancy is seldom diagnosed pre-operatively and usually develops in pre-existing adenoma.

Surgery is indicated in the early stages, and X-ray and radium treatment in the later stages.

The causes of surgical failure or incomplete results are (1) errors in the diagnosis, (2) faulty judgment in the choice of the time for operation, (3) the persistence of cardiovascular renal symptoms resulting from delay of operation, (4) the recurrence of symptoms due to incomplete operations and (5) myxedema resulting from the removal of too much of the thyroid gland.

The numerous advantages of basal metabolic readings are enumerated.

CLAYTON F. ANDERSON, M.D.

Breitner B. The Indications for the Surgical Treatment and Prophylaxis of Goiter (Indikationen fuer die chirurgische Behandlung und Prophylaxis des Kropfes). *Deutsche Wochenschrift* 9 2, 2271, 3.

The mechanical indication for operation is seldom the size of the goiter but usually its relation to the trachea (hence the importance of transillumination in two planes) and sometimes its relation to the esophagus. Compression of the trachea, even when interference with respiration is slight, is in itself an indication for surgical intervention, especially in young persons, in whom tracheomalacia often follows compression. According to Blauel and Reich chronic stenosis of the trachea leads also to colloid goiter and for this additional reason operation is necessary. Operation for cosmetic reasons is refused by many. In 60 per cent of cases the author has been able to find mechanical indication for operation on X-ray examination even when the patient did not complain of any symptoms whatever.

In cases of thyroid hyperfunction the choice of procedure is very difficult. This is evident from the variety of operations proposed. Kocher ligated one or all of the thyroid arteries, hile Sodeck, in severe cases, removed the gland entirely. Between these two extremes he various operations, thyrectomy and roentgen-ray therapy. A functional test of the thyroid is essential for the correct interpretation of the indications in hyperthyroidism.

The interpretation of microscopic findings must be made on the basis of secretion formation and absorption. In some cases of normal secretion hyperthyroidism may result from increased absorption. If Basedow's disease develops in a case of goiter as the result of removal from a goitrous region disease or psychic trauma, the secretion of colloid can be arrested by resection. If persisting thymus is associated with goiter causing compression and the clinical picture is exclusively or predominantly characterized by evidences of hyperthyroidism, resection of the goiter will relieve the compression but (thyrectomy) will perhaps have the most marked effect upon the condition. In cases of Basedow's disease with small or vesicular goiter not causing compression surgery is contra-indicated. The arrest of colloid secretion, hence, according to Blauel and Reich, may be brought about by diminished oxygen

consumption, cannot be used in the treatment of Basedow's disease. On the other hand, residence in an endemic goiter region is beneficial to persons with Basedow's disease. The causative agent of endemic goiter seems to have a favorable influence upon hyperfunction of the gland. Endemic goiter is based upon hypofunction of the gland.

Although the etiology of goiter is not entirely understood, the influence of iodine upon the condition has long been known. Sometimes hyperthyroidism is induced by the administration of iodine. The author has been able to demonstrate experimentally that colloid is stored in incomplete secretion of the gland which may be brought to the finished state by doses of iodine. The administration of small quantities of iodine in sodium chloride as recommended by Wagner Jauregg has proved a very good prophylactic measure. Injurious effects from such small quantities have never been observed. By this treatment the accumulated colloid is removed, and the goiter decreased in size. Since young persons utilize more thyroid secretion than older persons, the administration of iodine is not apt to produce hyperthyroidism in the former. This fact also indicates that endemic goiter is caused by interference with the absorption of secretion. The administration of small quantities of iodine as a prophylactic measure is of value only in cases of hyposecretion.

SALZER (2)

Pemberton, J. de la. The End-Results of Surgery of the Thyroid. *Arch Surg* 43: 174, 37.

The mortality of surgery of the thyroid gland compares favorably with that of any major surgery. At the Mayo Clinic during the year 1922 there were 193 operations on 497 patients with goiter with a mortality by operation of .95 per cent and mortality by cause of .3 per cent.

The diseases of the thyroid gland which are amenable to surgery may be grouped under six headings: (1) diffuse colloid thyroid, (2) adenoma without hyperthyroidism, (3) adenoma with hyperthyroidism, (4) exophthalmic goiter, (5) thyroiditis, and (6) malignancy.

Diffuse colloid goiter is a physiological enlargement of the thyroid gland occurring in adolescence, caused by iodine insufficiency and cured by the administration of iodine or thyroxin. Unless colloid goiter is associated with adenoma or causes pressure symptoms because of its size surgery is not indicated.

Adenoma without hyperthyroidism should be treated surgically, partly for cosmetic reasons and the relief of pressure symptoms, and partly because in certain percentage of the cases hyperthyroidism develops subsequently. The operative risk is less than .5 per cent and operation practically always results in cure.

If patient with adenoma of the thyroid gland develops hyperthyroidism the onset is usually so insidious that surgery is not sought until marked visceral degeneration has taken place, which is

crosses the operative risk and diminishes the chance for complete cure. The operative mortality in this group is between 3 and 4 per cent. Surgery results in a cure in about 83 per cent and in marked improvement in another 5 per cent.

Exophthalmic goiter is a constitutional disease due apparently to an excessive (probably abnormal) secretion of the thyroid gland. While its cause is unknown, treatment aims to diminish the activity of the thyroid gland. Because of the increase in our knowledge of the disease and of the dangers incident to surgery and because of the fact that persons with exophthalmic goiter are coming to operation earlier before the development of vascular changes, the surgical mortality has been reduced to 1.005 per cent in terms of operation and .74 per cent in terms of cases.

The natural fluctuating course of the disease makes it difficult to evaluate any form of treatment unless sufficient time has elapsed to preclude the probability of recurrence. For this reason the author selected for his study patients operated on in 1906. Of 48 patients with exophthalmic goiter to whom questionnaires were sent, a reply was received from 340 (71 per cent). Ninety per cent were living, 39 per cent considered themselves cured or greatly improved by the operation, 8 per cent were improved but showed evidence of hyperthyroidism or its effect, and 3 per cent were not benefited. In analyzing the data, lack of improvement could be traced definitely to three causes: (1) incompleteness of the operation, (2) the long duration of hyperthyroidism before the operation, and (3) failure to eliminate foci of infection after the operation.

Thyroiditis is rare. Surgery is indicated only in the tuberculous and suppurative types.

Malignancy occurs as sarcoma, carcinoma, malignant adenoma, and malignant papilloma in the ratio of one malignant case in fifty-seven benign cases. The prospect of cure by operation and intensive radium and roentgen ray treatment varies with the type of malignancy.

J. DEJ. PIERCE, M.D.

3130, C. H. and Pemberton, J. de J.: *Surgery of the Thyroid and Its Mortality*. *Ann. Surg.* 93, 147-160.

During the last sixteen months, up to May 1, 1932, 524 operations were performed at the Mayo Clinic on 1,049 patients with goiter. Twenty-five of the patients died, a mortality by operation of 0.90 per cent, and by cause of 1.28 per cent.

There were 1,308 operations on 853 patients with exophthalmic goiter. Thirteen of these patients died, a mortality by operation of 0.93 per cent, and by cause of 1.5 per cent. Two hundred and seventy-seven patients with adenomatous goiter with hyperthyroidism were operated on; nine died, a mortality of 3.4 per cent. Only three (0.36 per cent) of 819 patients died following thyroidectomy for goiter without hyperthyroidism.

The operative risk in cases of goiter without hyperthyroidism cannot be compared with that of goiter with hyperthyroidism; in the former the dangers are confined to the operative and postoperative accidents; in the latter the greatest danger lies in the disease itself.

The reduction of the mortality to .9 per cent in the surgery of exophthalmic goiter is attributable to three factors: (1) Patients with exophthalmic goiter are coming to operation earlier in the course of the disease, before the development of visceral degenerative changes. (2) By combined medical and surgical management, the development of postoperative acute hyperthyroidism has been reduced to the minimum. (3) A clearer recognition of the dangers involved in injury of the recurrent laryngeal nerve has led to greater care to avoid such injury.

The combined medical and surgical management of persons with exophthalmic goiter is warranted from the economic standpoint as it has reduced the necessity for ligatures.

As preliminary measures are ineffectual in adenomatous goiter with hyperthyroidism the mortality rate is dependent upon the number of poor risks accepted for operation.

A. J. SCOTT, M.D.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS; CRANIAL NERVES

Torrigiani: *Harsny's Sign of Deviation in Case of Lesion of the Frontal Region, and the Influence of Stimulation of the Frontal Region upon Provoked Vestibular Nystagmus* (Il segno della deviazione—Harsny—in un caso de lesione della regione frontale. Influenza dello stimolo della regione frontale sul nistagmo vestibolare provocato) *Spemannsche*, 9 LXVII, 401

In a patient on whom craniectomy had been done because of an injury of the frontal region the author was able to provoke intense vestibular nystagmus on the right or left side by electrical stimulation behind the ear. He observed further that when the craniectomy wound in the frontal region was cooled by compresses of ethyl chloride the nystagmus as completely arrested. The exact region cooled was the caudal part of the second frontal convolution.

In the author's opinion this clinical finding is of significance with regard to the centers of the frontal lobe and the routes uniting these centers and the ocular motor nuclei. W. A. BROWN

Locke, C. E. J. *Hydrocephalus (L. hydrocephalus)* *Brundage's* 9 5, 11 476

The author briefly reviews the theories as to the cause of hydrocephalus. Even after Hilton's report in 1860 of three cases of obstruction of the aqueduct of Sylvius it was generally believed that there are two types of hydrocephalus—the obstructive and the idiopathic. Since the work of Dandy and Weed in 1919, however, it is known that obstruction in the ventricles or the subarachnoid space is the cause of all types of hydrocephalus with perhaps one exception.

The author describes the anatomy of the ventricular and subarachnoid spaces with regard to the canals through which the cerebrospinal fluid circulates. The ventricular spaces are joined to the subarachnoid space by the foramina of Magendie and Luschka. The ventricular system, lined by ependyma, is composed of four cavities, the two lateral ventricles joined by the foramina of Monroe and the third ventricle which is joined to the fourth by the aqueduct of Sylvius.

The drainage of the subarachnoid space occurs into the spongy tissue between the arachnoid and pia and the perivascular spaces around the cerebral sinuses.

The author describes the origin of the cerebrospinal fluid in the choroid plexus and its circulation from the lateral ventricle to the third and fourth ventricles through the foramina of Luschka and Magendie, out into the subarachnoid space and

hence to absorption probably in large part by the villi of the arachnoid and to a slight extent by the lymph spaces.

Any obstruction in the course of the cerebrospinal fluid will lead to hydrocephalus. Thromboses of the straight sinus or the vein of Galen may produce this condition.

Obstruction due to tumor or inflammation of the foramen of Monroe causes unilateral dilatation of the ventricle resulting in unilateral enlargement of the head. Lumbar puncture does not evacuate much fluid and roentgen ray examination following the injection of air into the distended ventricle shows that only the one ventricle contains air.

Obstruction of the aqueduct of Sylvius is the cause of at least 90 per cent of the cases of infantile hydrocephalus. This may be due to congenital malformation with absence or blockage of the duct or to tumor or cysts from intra uterine infection, tuberculous, or gumma. It results in very large head with wide cranial sutures. Lumbar puncture yields only a small amount of fluid. Ventriculography reveals air in the lateral and third ventricle but none in the fourth or the cisterns.

Obstruction of the fourth ventricle is usually caused by a tumor (tuberculous, or gumma). In children, typical hydrocephalus results, while in adults there are signs of greatly increased intracranial pressure. Ventriculography shows air in the lateral and third ventricles and the dilated aqueduct of Sylvius but no air in the fourth ventricle, the cisterns, or the subarachnoid space over the cortex.

Obstruction of the foramina of Luschka and Magendie is rare. Lumbar puncture does not empty the ventricles. Ventriculography shows air in the dilated lateral ventricles, the third ventricle, the aqueduct of Sylvius, and the fourth ventricle, but none in the posterior cisterns or the cerebral convolutions.

Obstruction to the absorption of cerebrospinal fluid may follow inflammation of the arachnoid.

External hydrocephalus, which is very rare, is probably caused by the rupture of an obstructive hydrocephalus into the subdural space.

Puncture of the corpus callosum with drainage of the ventricles through a tube into the subdural space has not been successful, even when fistulae were formed by means of silk thread. The openings always closed in a short time. Attempts have been made to create a fistula between the subarachnoid space and the peritoneum, to remove parts of the choroid plexus or to cauterize it. More recently an obstruction of the aqueduct of Sylvius a tube is employed to reconstruct the duct and is left in place. When the foramina of Luschka and Magendie are closed the formation of new foramina is attempted.

KILLGORE SMITH, M.D.

Dandy W E. The Space-Compensating Function of the Cerebrospinal Fluid—its Connection with Cerebral Lesions in Epilepsy. *Bull Johns H Phys Hosp Balt* 9 3, 1933 245.

According to the most generally accepted view the function of the cerebrospinal fluid is to protect the brain and spinal cord from shock. Since the fluid is incompressible, this protection must be afforded by its ready displacement.

Mechanically lesions of the central nervous system are space-occupying or destructive in character. In the former space is obtained through reduction in the amount of blood circulating in the cerebral vessels, the destruction of brain tissue or the forcing of the fluid from the cerebrospinal fluid spaces of the brain. Subcortical tumors characteristically produce a pronounced local anemia of the brain substance directly above them and pallor of the adjoining cerebral substance which become less as the distance from the tumor increases. Tumors destroy cerebral substance and, by producing hydrocephalus, cause additional destruction due to the dilation of the ventricles. A greater amount of room for the development of the tumor is perhaps obtained by obliteration of the cerebrospinal spaces. There is absence of cerebrospinal fluid over a cortical tumor and consequently obliteration of the subarachnoid spaces. Tumors of the posterior fossa obliterate the cerebellar subarachnoid spaces and reduce the size of the cisterna magna. These facts may be shown graphically by cerebral pneumography.

In cases of destructive lesions the cerebral cavities are called upon to make up a very large share of the loss of space. As an intracerebral vacuum is unobservable, the ventricles and subarachnoid spaces must make up this destruction. A further contributing factor in filling cerebral defects is cerebral fibrosis or gliosis.

In epilepsy it is usually possible to demonstrate the presence of a cerebral lesion or a change indicating a lesion. The changes most commonly found are: (1) dilatation of the ventricles, (2) abnormal shape of the ventricles, (3) dilatation of the subarachnoid spaces, (4) cerebral atrophy, (5) areas of gliosis, (6) changes in the meninges, and (7) congenital malformations. Accumulations of fluid completely covering areas of the brain and rendering the underlying cortex and its vessels invisible indicate to Dandy that there has been loss of cerebral substance equal at least to the quantity of the fluid. In addition, the brain beneath the fluid is softer than the contiguous normal cortex. While these accumulations of fluid over the brain surface in epileptics have been recognized for some time, they have been regarded as the result rather than the cause of the convulsions. However, it is to be noted that many of the most severe cases of epilepsy of the congenital type do not show them. From these evidences of cerebral lesions the author concludes that a large percentage of the so-called idiopathic epilepsies have a pathological basis.

LOYAL E. DAVIS, M.D.

Koljubakin, S. L.: The Treatment of Cortical Epilepsy by Injecting Alcohol into the Motor Centers (Die Behandlung der corticalen Epilepsie mit Alkoholinjektionen in die motorischen Zentren). *Arch f Hs Chir* 9 3 1931 4.

The procedure discussed was developed by Razumovsky. The author believes that in cases of non-traumatic epilepsy of the Jackson type it should be substituted for the removal of the spasmodic centers (Horsley von Bergmann). A flap of skin, muscle, and bone is formed according to the method of Wagner and the dura is opened by two incisions parallel to the base of the flap. This procedure has the advantage that it renders dural sutures unnecessary. The centers are found with the aid of a unipolar electrode placed over the injection cannula, and are injected with from 2 to 3 c cm of absolute alcohol.

Of three cases treated in this manner all were benefited, but in one case a repetition of the injection was necessary after sixteen days. The patients were re-examined after sixteen days, seventeen days, and two months but these periods are undoubtedly much too short for correct evaluation of the method. Paralysis has not occurred. BOVEY (2).

Smith, P E and Smith, L P. The Function of the Lobes of the Hypophysis as Indicated by Replacement Therapy with Different Portions of the OX Gland. *Endocrinology* 9 3, 1919, 579.

In experiments on tadpoles the authors found that early hypophysectomy produced: (1) a slower growth rate, (2) failure of the larva to metamorphose, (3) albinism, and (4) large and persistent fat organs which they believe indicated a disturbance of metabolism.

By feeding extracts of the hypophysis of the ox they were able to control general body growth, the behavior of the pigmentary system, and the capacity of the fat organ. Extracts of the pars anterior of the hypophysis produced all of these results, while those of the pars intermedia and pars neuralis corrected only the pigmentary and metabolic disturbances.

These experiments are of interest since they tend to contradict recent claims that growth retardation induced by experimental hypophysectomy in the mammal is due to incidental injuries to the hypothalamus rather than to loss of anterior lobe substance.

LOYAL E. DAVIS, M.D.

Just, T H. Brain Abscess Due to Otitic Infection; Right Temporo-occipital Abscess Without Clinical Signs. *Proc Roy Soc Med Lond* 1913, 11, Sect Otol 54.

The first case reported was that of a woman aged 27 years who had had otorrhea and deafness of the right ear since childhood. A few days before her admission to the hospital, headache which increased in severity and daily vomiting began. Examination revealed moderate rigidity of the neck, temperature of 101.5 degrees F and a pulse of 80. The right tympanic membrane was obscured by granula-

uous, a purulent discharge, and epithelial defects. There was no amnesia.

A radical mastoid operation showed the mastoid to be acellular and the roof of the antrum carious. Immediately above the tegmen was an extradural abscess. The dura mater beneath the temporo-sphenoidal lobe was covered with granulations. In the center of the exposed dura sinuses led to a brain abscess. This was opened, washed with saline solution through No. 6 catheter by the Cushing method until the fluid returned clear and drained with a tube. The tube was removed on the tenth day when pus drainage had ceased. The patient recovered.

In a second case of temporo-sphenoidal abscess containing 1 1/4 oz. of offensive pus, the granulating dura over the abscess was removed and the abscess was washed and sucked out with syringe for ten minutes. The drainage tube was loosened on the second day and removed on the third day. Recovery was progressive and uneventful.

Jenkins prefers free extension of the abscess wall and drainage by rubber tissue because a small hole and tube drain may become blocked.

Balances states that a brain abscess is difficult to drain and that washing it out may be dangerous. The drainage tube should be inserted as soon as the abscess is opened and then left in place because its accurate replacement is difficult. Balances always drains unless the abscess has been completely encapsulated. W. H. C. BURNETT M.D.

Gabriel: Encephalography (Ueber Encephalographie)

Monatsh. f. Geb. u. Frauenheilk. 9, 3, 1922, 65

The Binger method of introducing air by syringe into the ventricles will demonstrate not only the ventricles, but also the surfaces and the individual portions of the brain. The Dandy method of filling the ventricles directly should be used only when the Binger procedure is insufficient. The author employs cocaine for the infiltration. Changes in the pulse and attacks of sweating and pallor during the filling are of no importance. As a rule there is a rise in the temperature on the first day. Encephalography has never caused death in the author's cases. TORRES (2)

Spiller W. O. The Diagnosis of Brain Tumors. *Atlantic M. J.* 923, LXVI, 73

Dandy W. E. The Diagnosis and Treatment of Brain Tumors. *Atlantic M. J.* 925, LXVI, 726

Most difficult in the complex problems of the diagnosis of brain tumors is the localization. In addition to the important neurological examination, ventriculography is now used for this purpose. General signs of increased intracranial tension have, of course, no localizing value and may give rise to extremely confusing symptoms. A lesion which develops slowly in the brain does not cause symptoms of the same intensity or extent as those caused by a lesion which forms rapidly since in the first instance the brain is better able to adjust itself to the altered conditions.

In the early diagnosis of cerebellopontine angle tumors the Barany tests in the hands of a trained otologist, revealing the presence or absence of function of the vestibular nerve, are regarded as of prime importance. Amnesia, ptosis, or inability to use the proper word is one of the earliest signs of tumor of the superior left temporal lobe. A sixth cranial nerve palsy is of localizing significance when it develops early or is associated with paralysis of adjoining cranial nerves, but causes great confusion when it develops late. Roentgenograms of the skull without the injection of air into the ventricles are of value in lesions about the sella turcica, calcified tumors, and endotheliomas, but others are rarely of diagnostic aid.

Ventriculography is associated with serious risk and should be used only by a competent neurosurgical surgeon fully acquainted with the anatomy and physiology of the nervous system. Brain enlargement and normal variations in the anatomy of the ventricles have both led to the misinterpretation of ventriculograms. Air within the brain is an irritant and when introduced rapidly or in excessive amounts and when used in the cases of patients in a precarious surgical condition may be the cause of fatal diagnostic error. The correct interpretation of ventriculograms must rest upon a definite and thorough knowledge of the normal.

In competent hands, and when correctly interpreted, ventriculography may be of decided aid in localizing lesions which can be treated thoroughly and directly by operation. To remove the tumor and thus to attack the lesion directly and to do so fewer palliative decompression operations should be the goal of the future. LEWIS E. D. M.D.

Wertbeiner P. Anatomische Klinische Considerationen an Intracranialen und Transcraialen Subdural Hämorrhagien im Adulte (Considerations anatomiques cliniques sur les hémorrhagies sous-durales intracraniales et transcraiales de l'adulte). *Rev. de chir. Par.* 9, 3, 1920, 50

In Wertbeiner's opinion, subdural hemorrhages frequently follow intracranial injuries and often are the cause of death. Such hemorrhages are multiple and may pass unrecognized as their clinical symptoms are not very clear. Fracture of the skull is not necessary for their development, and they are not favored by any particular type of fracture. While absorption may take place, there can be no assurance of it, and therefore as a rule exploration and evacuation are indicated.

Lumbar puncture does not always reveal hematic fluid, but usually hypertension and symptoms of cortical irritation or cerebral deficiency are noted. These may be manifested by epileptiform crises of the Jacksonian type, ptosis, or hemiplegia.

The fact that even slight lesions may cause hemorrhage does not seem to be well appreciated. According to Henrichsen, even 1/2 of coughing may be responsible. In thirty three of 266 cases collected by Henrichsen, no cranial or cerebral lesion was found.

Except in cases of open fracture the danger of infection of an intracranial hematoma is slight.

Treatment should be given early. Lumbar puncture may be employed in both the diagnosis and the treatment, but in the latter is not sufficient even if repeated. Trephination is necessary at least as far as exploration, and is indicated by the least symptoms of intracranial compression. The site depends on the signs of localization. In the presence of signs of compression and the absence of extradural hemisclerage, the dura mater should be incised as the persistence of an unrecognized hematoma is dangerous. When trephination has been deferred to the period at which a hematoma has been definitely formed, evacuation of the hematoma is sufficient. If signs of compression develop after lumbar puncture will be beneficial and is to be preferred to drainage which might be a source of secondary infection as well as of irritation favoring recurrence of the hemorrhage.

Early operation is the best means of preventing the complications of subdural hematoma and lowering the mortality. Trephination is the best treatment to prevent secondary epilepsy. W. A. BARNES.

Doyle, J. B. Glossopharyngeal Neuralgia. *Med Clin N. Am.* 9:370-5.

Seven cases of glossopharyngeal neuralgia seen at the Mayo Clinic are reported.

In one case that of a man 63 years of age, complaint was made of pain in the throat and the right ear. The patient stated that five years previously after taking a drink of cold water he experienced sharp paroxysmal pain in the region of the right ear and excessive tenderness of the auricle. These attacks recurred until 1908, when his tonsils were removed. He was then completely relieved for about three years, but thereafter had mild paroxysms for six months. The pain recurred in February 1911 and at the time of examination he was having great difficulty in obtaining sufficient nourishment because of the pain induced by drinking and mastication. The pain was paroxysmal, short, and agonizing, it arose in the right facial region, radiated laterally to the area anterior and posterior to the right ear and lasted from thirty to ninety seconds. Physical and neurologic examinations were essentially negative except that a trigger area was discovered in the right hypopharyngeal region. On March 23, 1911 the sensory root of the right glossopharyngeal ganglion was cut. The motor root was preserved. On April 1 the pain recurred. On April 5 the glossopharyngeal nerve was avulsed from the jugular foramen and the pharyngeal branch of the vagus as cut. For the past ten months there has been no recurrence.

Another case was that of a man aged 53 years, who complained of a dull throbbing pain in the region anterior to the right external auditory meatus which was associated with paroxysms of short, stinging pain in the right side of the throat and the right ear and had been present for two weeks. I

section of the mandibular division of the fifth nerve and the auriculotemporal nerve gave no relief.

The five other patients presented the same syndrome of paroxysmal pain initiated by talking, chewing, coughing, and sneezing and especially by cold water touching the pharyngeal wall. Two in this group were operated on. In one case, the operation was stopped before the ninth nerve was exposed in the other complete symptomatic relief was obtained following avulsion of the ninth nerve and section of the pharyngeal branch of the vagus.

The distribution of pain in the first two cases was considered atypical, but the paroxysms were exactly like those of trifacial neuralgia. Following the recurrence of pain after section of the sensory root of the gasserian ganglion in the first case, and after the failure of alcohol injections in the second, it became apparent that in spite of the resemblance to trifacial neuralgia, some nerve other than the trigeminal was involved.

Glossopharyngeal neuralgia is definite clinical entity differing from trifacial neuralgia only in the area of distribution of the pain. J. B. DOYLE, M.D.

Clemenson, F. J. A Case of Acoustic Tumor (Right). Operation by Sir Victor Horsley in 1912. Removal of Tumor; Recovery. *Proc. Roy Soc Med Lond.* 9:376, Sect Otol 37.

Walsh, F. M. R. A Specimen of Brain and Acoustic Tumor. *Proc. Roy Soc Med Lond.* 1913, vi, Sect Otol 3.

Trotter, W. The Surgical Treatment of Eighth Nerve Tumors. *Proc. Roy Soc Med Lond.* 9:376, Sect Otol 37.

This brief symposium upon the diagnosis and surgical treatment of tumors of the eighth nerve followed the presentation of a patient who had been operated upon in 1901 by Sir Victor Horsley for an acoustic tumor. The residue of symptoms in this case consisted of complete deafness in the right ear, sensory disturbances over the area of the right fifth nerve, right facial paresis, and a slight defect of coordination in the right hand.

Symptoms referable to the eighth cranial nerve, of course, rather in the clinical picture of such tumors. These symptoms are vertigo and progressive deafness with or without tinnitus. Attention is called to the importance of the experimental work of Magnus and de Kleij in differentiating between cerebellar and labyrinthine defect symptoms. The evidence indicates that ataxia, nystagmus, and muscular stonias are of cerebellar origin. The posture of the head so common in cerebellar lesions is probably a manifestation of a unilateral labyrinthine defect. Loss of muscle tone is due to the rotation of the head, which sets up what Magnus terms a "tonic neck reflex." This reflex in turn produces diminution of tone in the extensor muscles of the limbs of the side of the lesion.

A progressive paralysis of function in the cranial nerves adjacent to the acoustic nerve and in the cerebellum causes the symptoms which mark their appearance. The fifth, seventh, sixth, ninth,

of the ulnar. Thereby the histological union of both nerves was proved beyond doubt.

Double union is to be preferred to single union as the latter is often only partially successful. In double union the paralyzed nerve obtains new strength from two sources: () from the central stump belonging to it, and () from the prisms of the bridging nerve. The single union receives it from the latter only. STERNBERG (2)

Bankart A. S. B. Openshaw T. H. Riddoch G., Little, E. M. and Others. Discussion on the Operative Treatment of Spastic Paralysis. *Proc Roy Soc Med Lond* 93. Sect Orthop. 33.

Since spastic paralysis is usually due to permanent injury to the upper motor neurone, the benefit to be derived from operative treatment is limited. Extreme mental deficiency, tetanus, and progressive disease are contra-indications to surgery.

The muscle contractures may be physiological or of long persistent structural. Only surgery can avail in either case. In the former we have the choice of attacking either the afferent side of the reflex arc by the Foerster operation or the efferent side by cutting the motor nerve supply to the muscle. The Foerster method has been abandoned by most orthopedic surgeons because of the great difficulty in localizing the afferent impulses from any particular group of muscles in any particular spinal nerve roots.

By the Stöfel method of attacking the direct nerve supply to the muscle, much more definite any muscle or part of a muscle can be put out of function. A sufficient amount of the nerve bundle is cut to destroy the spasticity but enough is left for physiological requirements. With refinements of technique and definite knowledge of the physiol-

ogy of the nerve trunks, which is fairly constant for any given cross section, the resection of the required amount of the bundle is not difficult. Stöfel's operation abolishes the prolonged after-treatment and the use of braces. The spasticity is permanently relieved and all the child needs is encouragement and practice in walking.

In discussing Bankart's article Openshaw said that he had always operated on spastic cases by division of muscles and tendons. He had done Foerster's operation in two cases but found it extremely difficult and its results uncertain. Mitchell Little cited a case in which Foerster's operation cured the spasm but left the patient without sense of balance so that he could not walk alone. Little spoke of four cases in which he had done the Foerster operation with discouraging results. He favors resection of the motor nerves after they leave the parent trunk and seeks them out by electrical stimulation. Regarding Stöfel's operation Laubank

was not so optimistic as Bankart. He found that in old cases tenotomy was required in addition, and that in many cases splints were necessary in the after-treatment. He agreed with Openshaw as to the disappointing results following Foerster's operation. Roy Jones also considered tenotomy of the Achilles essential in addition to the nerve resection. In the upper limbs he has had better results from tendon transplantations than from nerve operations. Brinston said that in his experience it is as safe to divide both branches of the obturator nerve for adduction spasm. He prefers to divide it above the foramen by the extrapentotomal route. Feilberg, neurologist, was another who testified to the disappointing results following the Foerster operation. Kimble and Ashton Dunn both advocated re-education of the muscles after the Stöfel operation.

WILLIAM A. CLARK, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Glass, E. Additional Observations on the Disease Picture of Subacute Mastitis with the Formation of Nodules in the Breasts (Weitere Beobachtungen ueber das Krankheitsbild der subakuten Mastitis mit Knotenbildung in der Mamma) *Deutsche med W Wochschr* 9 3 41 75

To five cases previously reported the author adds eleven others. The condition described occurs usually in young girls and young women with pendulous breasts. Generally both breasts are moderately enlarged and hard, and contain several well circumscribed, hard, and tender nodules, the size of hazelnuts, which resemble fibromata. The remaining glandular tissue is often sensitive to pressure. The glands at the border of the pectoral muscles are painful and enlarged.

The size and sensitivity to pressure are very changeable and show distinct relationship to menstruation, being greatest about midway between the periods. In one case in which microscopic examination was made the picture of chronic mastitis, proliferation of connective tissue and round cell infiltration was found. In every case except one rapid recovery was effected by the wearing of support for the breasts. If there is any doubt regarding the benignity of the nodes, especially when they are not at all or only slightly sensitive to pressure, the removal of gland for microscopic examination is indicated. *WORKMAN (L)*

Bonta, F E. Tumors of the Breast. *Ob. State M J* 9 3, xix, 36

Bonta presents and discusses the findings in a detailed study of the records of 164 cases of diseases of the breast, among which were 7 malignant tumors.

The cases are divided into three groups viz. benign tumors, malignant tumors, and miscellaneous conditions. The number of cases in each of these groups were: benign tumors, 6 (adenofibroma 60 per cent) malignant tumors 7 (carcinoma 66 4 per cent) cysts, mastitis et 38 (cysts and cystic mastitis, 65 per cent mastitis, 9 per cent).

The age incidence was as follows:

Age Years	Benign Per cent	Malignant Per cent	Cysts, mastitis, etc Per cent
Under 20	3		4
20-25	0 5	7	7
25-30	5 7	9	
30-35	26 3	5 5	29 4
35-40	24 4	3	4 8
40-45	8 7	27 6	8
45-50		7 7	5
Over 50		5 3	4

The comparatively high incidence of the benign conditions in the earlier years, i.e. under 30, and of the malignant conditions in the later years appear significant as an indication of the potential malignancy of benign conditions.

Adenofibroma represents a more definitely precancerous condition than mastitis. In ninety three (34 per cent) of the cases of cancer a history of trauma was given, in twelve cases the breast had been massaged, and in thirty-nine there was a history of abscesses or caked breast. In 17 8 per cent there was hereditary history of cancer. The fact that 74 6 per cent of the total number of patients and 80 7 per cent of those with malignant tumors were married is significant.

That function of breast is of some importance as causative factor is suggested by the fact that only 1 per cent of the breast tumors in men were malignant as compared with 55 8 per cent of those in women.

The length of time between the discovery of the tumor and the operation, and the incidence of postoperative recurrences and metastases are summarized in tables. In 84 per cent of the cases the condition was first manifested by lump and in 8 per cent by pain.

Of 44 cases of cancer recurrences have developed in 50 per cent. The three-year survival in the malignant group equalled 43 per cent the five year survivals 28 8 per cent and the ten year survivals, 3 per cent. The number of survivals in cases of malignancy in the center and the upper outer quadrant of the breast was much smaller than that in cases in which other areas of the breast were involved. *CLAYTON F ANDERSON, M D*

TRACHEA, LUNGS AND PLEURA

Parodi F. The Mechanism of Action of Artificial Pneumothorax on the Basis of Anatomico-Pathological Observations (Il meccanismo d'azione del pneumotorace artificiale in base alle osservazioni anatomico patologiche) *Ped. Rome* 9 3, xix, sez prat 480

From a macroscopic and microscopic study of the lung in a fatal case of tuberculosis treated by artificial pneumothorax for a year Parodi draws the following conclusions:

In the lung subjected to collapse the tuberculous infiltration retains its pathologic character.

Pneumothorax *per se* does not cause recovery but aids it by favoring the proliferation of connective tissue.

It hinders but does not prevent the spread of the disease by the bronchial, hematatic, or lymphatic routes.

4. In the beginning and for some time it acts chiefly mechanically by diminishing the areas of absorption.

W. A. BARRY

Stewart, W. H. Pulmonary Abscess Roentgenographically Considered. *J. Radiol.* 9, 3, 17

While the clinical picture and physical examination are usually sufficient for the diagnosis, the roentgen examination is especially valuable in locating the lesion and giving accurate information as to its extent and the presence or absence of associated pathologic conditions.

The early process seen roentgenographically is a localized pneumonitis of varying degree. The shadow is more often oval than circular. Its center lighter area soon appears, indicating cavity formation. The roentgenographic picture depends upon the amount of secretion present. If the cavity is filled, it is impossible to distinguish between the infiltration and the fluid. If it is only partially filled, a fluid level with a clear area above is seen. The infiltration varies greatly in character, usually the more acute the process the more dense the shadow. In cases of old, well established pyogenic membranes are found and there is very little involvement of the lung surrounding the cavity. Before softening or gangrene occurs it is impossible to determine whether one is dealing with one or several abscesses.

The lesion most commonly mistaken for lung abscess on X-ray examination is a small sacculated empyema. Certain cases of sarcoma of the lung simulate the multiple form of pulmonary abscess. The chronic form of lung suppuration may lead to diagnosis of pulmonary tuberculosis. In the latter however there is little, if any infiltration surrounding the cavity, and the position, laboratory findings, and manifestations of the disease elsewhere the lungs will reveal its character.

To demonstrate an abscess roentgenographically the chest must be examined in all positions. The author has found the prone lateral position, with the tube in front and the plate behind, most satisfactory especially when the patient is unable to maintain the erect position. That cavities are more readily mapped out in this position is due no doubt to the fact that the abscess is usually oval with its long diameter extending from the root toward the periphery. Localization by means of the roentgen ray in position other than that in which the patient is to be placed on the operating table is unsatisfactory.

It is better to describe the relation between the abscess and bony landmarks than to attempt to mark it on the skin. The ideal method of localizing lung abscess is fluoroscopic examination made with the adjustable head fluoroscope after the patient has been prepared and placed in position on the operating table. ANTON HARTUNG, M.D.

ESOPHAOGUS AND MEDIASTINUM

Bircher E. Contributions on the Pathology of the Thyroid Gland. II The Surgical Treatment of Thyroid Asthenia and the Importance of the Thyroid in Surgical Infections. (Beiträge zur Pathologie der Thyreoiden. II Zur chirurgischen Behandlung des Asthenia thyroidea und der Bedeutung der Thyreide bei chirurgischen Infektionen.) *Deutsche Zeitsch. f. Chir.* 9, 3, 1291, 36

From the autopsy records for the last three years of cases in which at two thyroid lymphatic nodes was factor the author found that, especially in four infectious diseases, the incidence of enlargement of the thyroid was extremely high. This was true in 85 per cent of the fatal cases of tetanus (six), in 80 per cent of those of acute infection of the gall bladder (five) in 75 per cent of sixteen cases of diphtheria, and in eight cases of perforative appendicitis. That it was not a coincidence is evident because of the well known susceptibility to infection of persons with the lymphatic habitus, in which, presumably internal secretory conditions are involved. Bircher paid particular attention to the occurrence of thyroid enlargement in young persons with diphtheria and in diphtheria suspects and observed a large number of cases of pure tracheostomal thyroids.

In the past eight years Bircher has treated ten cases of pure thymic stenosis in children. In most of these, chronic thymic asthma had been present for a long time and had suddenly become more severe. The jugular tumor formation as distinctly evident clinically sometimes on bending the head backward. In all of the cases considerable portion of the thymus was resected. Three low tracheotomy was performed first, but did not relieve the interference with respiration. Nine of the children were cured.

In four cases operated upon after the diagnosis of acute diphtherial stenosis (no diphtheria bacilli were found later) tracheotomy was unsuccessful, whereas resection of the thymus performed immediately thereafter cured the dyspnea. Two of the patients were cured and two died.

In six (possibly seven) cases of true diphtheria with associated thymic enlargement in which the thymus was resected at the time of the tracheotomy there were two deaths. Therefore the mortality was only 30 per cent whereas ordinarily in diphtheria with associated status thymicus it is 75 per cent.

In nineteen of these twenty cases the thymus tumor showed histologically distinct medullary hypertrophy the Hassall corpuscles are enlarged but decreased in number.

Bircher disapproves of roentgen ray therapy for persistent thymus as it is associated with the danger of causing thymic atrophy with total cessation of development as was observed by him in one case three years after an irradiation. In another case roentgen ray therapy caused an aggravation of the symptoms, necessitating operation. MAXWELL (2)

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Mason, J. C. Postoperative Ventral Hernia. *S. & Gynec. & Obst.* 9:3 XXXIV, 4

During a period of four years 5,970 abdominal operations were performed at the Mayo Clinic, 596 (0.5 per cent) of which were for the repair of postoperative hernia. Recurrent umbilical and recurrent inguinal hernia were not included. During the same period, 4,249 inguinal, 217 femoral, 37 umbilical and 113 miscellaneous hernia were repaired. The postoperative hernia therefore constituted 4.66 per cent of the total number of operations for hernia; eighty-four were recurrent. The original operation had been performed at the Mayo Clinic in 34 cases and elsewhere in 46.

Postoperative hernia develop usually as a result of sepsis. In many instances this is unavoidable when drainage must be instituted as the primary operation. The next most usual cause of postoperative hernia is increased intra-abdominal pressure due to paralytic ileus, vomiting, coughing, hiccupping, sneezing or straining. Improper closure of the wound at the time of operation, which permits hemorrhage and edema and therefore favors poor coaptation, interferes materially with solid union. In certain debilitated and starved patients, wounds may be slow in healing.

The treatment is divided into preventive measures, such as the proper preparation of the patient for abdominal operation, the proper type of anesthesia, proper closure of the wound with proper suture material, and postoperative care. The curative treatment includes pre-operative measures such as reduction of obese patients, and the gradual reduction of the hernia which slowly brings the intra-abdominal tension to that required for the operation.

Local nerve blocking supplemented, if necessary by nitrous oxide, ethylene or ether is the anesthesia of choice.

The manner of closing wounds depends on the portion of the abdomen incised. One hundred and eighty-one hernia occurred in a straight incision in the rectus muscle; 73 in a low midline incision in the split muscle or McBurney incision; fifteen in a high midline incision; and twelve in the rarer forms of incisions. In 80 cases (54.68 per cent) some form of drainage had been used. A low midline incision is about the only site of postoperative hernia not preceded by infection. To guard against this, the author opens the sheath of the rectus on each side and effects closure exactly as in the ordinary straight incision. In women with marked diastasis recti it is advisable to excise the umbilicus and overlap the aponeurosis for a short distance.

Anatomical closure is the operation of choice if it can be effected without undue tension; otherwise plastic overlapping, preferably vertical, based on the same principle as the Mayo operation for umbilical hernia, is desirable. Undue tension must be avoided. The suture material of choice is twenty-day chromic catgut No. 1. Tension sutures of chromic catgut are best applied after the insertion of one row of a continuous mattress suture closing the peritoneal cavity. For cases in which the overlapping flaps consist mainly of scar tissue the living suture (Gallie and Leifseuer) made of narrow strips of autogenous fascia lata is advocated. These strips are sewed into the flaps in much the same manner as stocking is darned. The wound is then packed with rubber tissue and partial closure is made with dermal sutures. The rubber pack allows ample drainage of the serum blood and broken down fat. After forty-eight hours partial secondary closure is made.

The results are very satisfactory. Of the 596 patients, eighty-four of whom had had at least one previous operation, 134 (48 per cent) have weak wounds; thirty more or less bulging and only fifty-four (57 per cent) are complaining of slight inconvenience. Twenty (3.35 per cent) did not improve. There were four deaths, mortality of 78 per cent. E. E. LARSON, M.D.

GASTRO-INTESTINAL TRACT

Rhfsus, M. E. Diagnosis of Gastric Disease. *J. Clin. Med.* 9:3 W. 55

The secretory and motor functions of the stomach are intimately associated but not entirely dependent upon each other. The ingestion of food sets up a complicated series of cycles, one secretory, the other motor. Psychic stimuli produced by emotion or through the special senses in the presence of food may have a marked effect on digestion. Various substances react in a more or less characteristic manner in the stomach, and the entire meat group causes a distinctly higher acidity than vegetables or cereals. Along the lesser curvature near the pylorus there are few acid cells. This area appears to have a lower resistance to the erosion of gastric juice than the rest of the stomach, since it is here that most gastric ulcers develop.

In its motor function the stomach is in reality two organs as the cardiac portion contracts three or four times as often as the antrum. There are two groups of persons, those who comparatively slowly emptying stomachs and those with comparatively rapidly emptying stomachs. The substance which required the longest time for normal gastric digestion in the cases studied by the author was pepsin, but in no in-

stance was there any retention after a period of six hours.

Certain organic diseases of the stomach affect the mucous membrane alone, others affect the sphincters and muscles, and a few cause general impairment. Systemic conditions may alter the functional output of the stomach either directly or reflexly. In cases of gastric disorders the symptoms are usually associated with some definite phase in the gastric cycle, occurring after the ingestion of food, during the active stage of digestion, or at the conclusion of digestion. In extra gastric conditions the symptoms are usually more or less irregular.

With modern technique and examination of the stomach in every plane the X ray will demonstrate not only the situation of the lesion, but also not infrequently its nature.

Gastric analysis has three objects, viz:

1. To measure the work of the mucous membrane. This it accomplishes in terms of secretion.

2. To measure the work of the musculature and sphincter. This it accomplishes in terms of gastric evacuation.

3. To demonstrate the presence of anything more than the meal and secretions. Fractional analysis is as yet preferable because any erroneous conclusions may be drawn from single examination.

As a disease condition affects the mucous membrane or the muscles and sphincters, it will affect also the nature and character of its gastric work. A distinct alteration in the type of gastric secretion either a hyperacidity or a subacidity means only one thing and that is an alteration in the mucosal function. The evacuation of an H. acid meal in from one hour and forty five minutes to two hours and thirty minutes may be considered normal. Evacuation in less than this time or requiring longer than three hours is abnormal and due to hypomotility atony or organic disease at or near the pylorus. These various disorders of secretion and motility may be the result of either intra or extra gastric disease.

CHEM. J. GARDNER, M.D.

W. LEE, B. H. Cardioplexy for Cardiospasm. *Ann Surg* 19 3, Irvine, 65.

PRESTON, L. E. An Operation for the Relief of Cardiospasm. *Ann Surg* 9 3, Irvine, 74.

WATTS believes that in cases of cardiospasm surgery is justifiable only when the hydrostatic dilator cannot be passed through the cardia. With the aid of a silk thread guide (gastronomy is only palliative measure. Watts reviews the literature and reports in detail a case in which he effected a cure by cardioplexy.

FREEMAN reports a case of cardiospasm associated with dilatation and tortuosity of the esophagus in a man of 50 years. At operation, the upper segment of the dilated and rather loose esophagus was invaginated into the lower segment without opening the lumen and this intussusception was fixed by few stitches of chromic gut. Primary union occurred.

EDM. C. ROBERTSON, M.D.

MURRAY H. A., J. The Chemical Pathology of Pyloric Occlusion in Relation to Tetany. A Study of the Chloride, Carbon Dioxide, and Urea Concentrations in the Blood. *Arch Surg* 1923, Vol. 66.

Gastric tetany is described as a form of nerve hyperirritability associated with vomiting, dilatation of the stomach, and pyloric occlusion and usually a lesion near the pylorus. The treatment is largely surgical. In this article the author reports the blood findings and clinical histories of seven cases of obstruction at or near the pylorus and the results of experimental work on dogs.

The condition was first described in 1869 by Kussmaul, who attributed it to denervation of the tissues. In experimental work on dogs, MacCallum found that it could be produced after experimental occlusion of the pylorus by frequent washing of the stomach. Chemical changes found after pyloric occlusion have been compared by a number of investigators to those found after parathyroidectomy. In a study of the effect on the nerves of changes in the ratio of sodium to calcium it was discovered that nerve irritability is increased by relative increase in the concentration of the sodium and decreased by a relative increase in the calcium. MacCallum reported that pyloric occlusion is followed by a decided increase in the electrical irritability of the nerves. In the investigations made by the author and others it was found that when tetany was produced by pyloric obstruction the blood chemistry was markedly changed, showing rise of the carbon dioxide of the plasma, fall in the chloride content of the blood and plasma, an increase in the phosphorus and sulphur and a slight rise in the hydrogen ion concentration. In pyloric stenosis the hydrochloric acid cannot pass into the intestines and become reabsorbed. When it is expelled by vomiting or removed by gastric lavage, disturbance in the acid-base balance in the blood and tissues results.

In cases of persistent vomiting one of the most important investigations is the determination of the carbon-dioxide content of the plasma. If this is greatly increased in the absence of history of alkali therapy—to over 80 per cent by volume—the presence of obstruction at or near the pylorus is indicated. If it continues to rise, tetany can be predicted.

Gastric tetany must be differentiated from the tetany of hypoparathyroidism, the tetany of hyperpnea, and the tetany following the administration of alkalies or sodium salts. HANCOCK M. CAVEL, M.D.

SCHMIDLER, R. Gastroscopic Studies on the Healing of Gastric Ulcers (Gastroscopische Untersuchungen über die Heilung des Ulcus rotundum ventriculi). *Munchen med Wchnsch* 9 3, 1923, 477.

Ulcers at the pylorus usually escape gastroscopic diagnosis on account of their location, while those in the fundus are easily seen. The healing of ulcers can be studied exactly only with the gastroscope,

as roentgen findings, such as the disappearance of niches, are not conclusive.

The author reports three cases in which he studied the process of healing gastroscopically. In one case of ulcer on the lesser curvature which he reports in particular detail, the lesion had become smaller and shallower at the end of twelve days and was then bordered by normal mucosa surrounded by a deep red, injected, circular zone. After thirty-one days it was the size of a pea, the mucosa of the cardinal edge was reddened, and the circular zone had disappeared. After thirty-eight days it had become epithelialized. After fifty-seven days a yellow retracted scar was seen.

The Leube treatment and, as medication, a mixture of bismuth sulphate, extract of belladonna, and papaverina are recommended. TIZOT (Z)

Charrier. Three Cases of Perforation of the Stomach by Ulcer (Trois cas de perforation de l'estomac par ulcère). *Bull. et mémo. Soc. de chir. de Par.* 93, xix, 494.

Ferrari. Two Cases of Perforation of the Duodenum by Ulcer (Deux cas de perforation d'ulcère du duodénum). *Bull. et mémo. Soc. de chir. de Par.* 93, xix, 494.

In two of the three cases of ulcerous perforation of the stomach reported by Charrier, only suture of the perforation was done; both patients recovered. In the third case the perforation, which was prepyloric, was surrounded by a thick zone of induration and the pylorus appeared greatly constricted. A gastro-enterostomy was therefore done in addition to the suturing of the perforation. The patient died the second day after the operation.

Gastro-enterostomy was done in addition to suturing of the perforation also in one of Ferrari's cases in which the ulcer was situated in the strictured pyloric canal. The patient died fifteen hours after the operation.

Briehot, in discussing these reports, called attention to the fact that both of these surgeons, who are experienced, avoided a partial gastrectomy. In the two cases in which gastro-enterostomy was done, it was necessitated by the structure of the pylorus. Briehot believes that in cases of perforated ulcer minimal surgical intervention should be the rule and that this should consist of excision followed by suture and burial of the edges of the perforation by omentoplasty or, in cases without extensive induration, excision of the indurated area and gastro-enterostomy. Partial gastrectomy is indicated only exceptionally when more conservative treatment is impossible. W. A. BREWSTER

meter (2) those between 1 and 2 cm and (3) those over 2 cm. A large percentage of the ulcers now seen are small, and 90 per cent of them involve the lesser curvature. Since the cautery is particularly suitable for such cases it has a wide applicability.

The method originally described for the use of the cautery in the treatment of these small ulcers is followed, but the importance of thorough excision of the lesion by the cautery is emphasized, as unquestionably certain failures to cure were due to inaccuracy in this respect. Such excision is combined, of course, with gastro-enterostomy.

Ulcers with medium-sized craters should be exposed by an opening made with the cautery at the edge of the induration and, with the crater of the ulcer in view, a wide excision made with the cautery knife. If such ulcers are at the pylorus, partial gastrectomy will be preferred by certain surgeons, and their experience may justify it. Cautery excision combined with gastro-enterostomy has been performed in the Clinic in 390 cases: 1 gastric ulcer with a mortality rate of 2.1 per cent, a rate lower than that of any other type of operation performed for gastric ulcer in the Clinic. In one series of 48 consecutive cases there was no operative mortality. Eighty per cent of the patients report satisfactory results from the operation, 14 per cent are benefited, 4 per cent failed to derive benefit, and 2 per cent are known to have developed subsequent ulceration.

The cautery is used also in cases of ulcers high on the lesser curvature. These in any other situation in the stomach would indicate partial gastrectomy.

As in the entire series of 75 cases there have been only 1 per cent of recurrences of ulcer including gastrojejunal, the fear that the cautery may itself produce subsequent ulceration is quite unfounded. Similar results are found in connection with cancer developing after operations for gastric ulcer. Of 48 persons subjected to cautery excision of gastric ulcer eight (16.7 per cent) subsequently died of cancer of the stomach. This group, however, includes cases of inaccessible lesions which were classified at the time as ulcers but which, in some cases, undoubtedly had become malignant.

In cases of duodenal ulcer the indications for the use of the cautery are not so definite but the method may be employed satisfactorily when the ulcers bleed or there are other reasons for excising. If the bleeding ulcers are small and on the anterior wall of the duodenum, the point of Paquin cautery may be easily thrust through the lesion. Such excision has done more to eliminate the possibility of subsequent hemorrhage than any other one procedure. D. C. BALFOUR, M.D.

Judd, E. S., and Rankin, F. W. A Technique for the Resection of Gastric and Duodenal Ulcers. *Surg. Gynec. & Obst.* 93, xxxiv, 6.

A study of the cases of gastric ulcer at the May Clinic with reference to their end results and the type of operation employed has demonstrated that a definite percentage of the patients with gastric

Balfour, D. C. The Use of the Cautery in Peptic Ulcer. *Ann. Surg.* 93, lxxviii, 206.

The author bases his discussion of the use of the cautery in peptic ulcer on 75 cases in which the cautery was employed in the May Clinic. Gastric ulcers may be arbitrarily divided into three groups: (1) those in which the crater is 1 cm. or less in dia-

from the toxæmia and died the following day. An ecchymotic spot was found on the inner surface of the abdominal wall corresponding to the frostbitten area seen externally. Thus, in the author's opinion lowered the vitality of the underlying bowel, and when large amounts of liquid were given to combat the toxæmia the increased peristalsis caused the bowel to twist.

The third case was that of a man 35 years of age whose history of glycosuria for a period of 5 years and of constipation with occasional periods of diarrhea for the last six months. A weight loss of 40 lbs. in the 3 years had been associated with an increase in girth. For the past thirty days there had been no bowel movements although large quantities of laxatives had been taken. There was no pruritus, vomiting and no result from enemata. The abdomen was greatly distended but not tender. Considerable tympany was noted. There was no palpable mass in the abdomen, and the rectal examination was negative. The patient refused an exploratory laparotomy. The following day the abdominal distention was markedly increased, and he consented to an operation. The urea nitrogen equalled 64 mgm per 100 cm, and the blood sugar was 0. per cent.

Operation disclosed a hard, unquestionably malignant tumor of the sigmoid causing complete obstruction of the bowel. The terminal 4 or 5 ft. of the ileum and the cecum were involved in a clockwise contraction. This was reduced and a colostomy was done. After the operation persistent facial vomiting developed in spite of gastric lavage and other measures to combat it. The following day the urea nitrogen dropped to 30 mgm per 100 cm. The patient then developed a double bronchopneumonia and succumbed a few days later.

The fourth case was that of a man aged 43 years who gave history of occasional attacks of abdominal pain during the previous six months. Four days prior to his admission to the hospital there had been a recurrence associated with vomiting. His physician made a diagnosis of acute gastritis and prescribed large doses of morphine and a liquid diet. Three days later he was given a large dose of castor oil. This was followed by an increase in the pain and persistent nausea and vomiting, but no bowel movements. The abdomen was scaphoid, tender and resistant, but not rigid. There was no audible peristalsis. At operation on the fourth day a large volvulus, contra-clockwise, was found involving the upper four fifths of the small intestine. This was reduced, and the appendix, which was acutely inflamed, was removed. The operation was followed by recovery. The patient returned to work during the fourth week.

In each of the four cases in this report the distal bowel was inactive and the proximal bowel was thrown into unusual peristaltic activity as an antagonism most favorable for the production of volvulus.

Carey has shown that in the dog, cat, sheep, cow and pig, the muscular coats of the small intestine

are not the classical inner circular and outer longitudinal muscle fibers but fibers arranged in spiral form the inner a close spiral, and the outer coat more elongated, making complete turn every 20 to 5 cm or more. This arrangement imparts a screw like action to peristalsis and may be a factor in the production of volvulus.

From the cases reported in this article and his investigations, the author concludes that the generally accepted theory regarding the production of volvulus is erroneous as it frequently occurs in the absence of adhesions or other structural abnormalities of the intestinal tract. He believes that greater stress should be placed on disordered peristalsis leading to antagonism between two segments of bowel unequally filled. HAROLD M. CAREY, M.D.

Kerr, H. H. Intestinal Surgery. *J Am Med Ass* 9:3 June 64.

Kerr calls attention to the fact that of the five histologic coats of the intestine all only the peritoneal and fibrous are important from a surgical standpoint. All intestinal tubes should pass through the fibrous coat as this will keep them from tearing out and prevent the occurrence of leakage. The uniting suture should invaginate the peritoneal coat so that the folds of the stroma are completely surrounded by the peritoneum. One absorbable suture uniting the fibrous coat and invaginating the peritoneal coat as all that is required, even in total resection. A larger opening is obtained by dividing the intestine at an angle of 45 degrees. This will double the area produced by transverse section.

The author gives in detail the technique of the brushing stitch method devised by Parker and himself in 1907. Since this method has been used with the technique described he has had no failures.

WILLIAM E. SHACKLETON, M.D.

Pannett, C. A. The Technique of Axial Anastomosis of the Alimentary Canal. *Proc Roy Soc Med Lond* 933 xvi, Sect Surg 8.

In axial anastomosis of the bowel, an abcess often forms at the mesenteric border which is due, not only to lack of peritoneal covering but also to interference with the blood supply. As the strongest adhesions are present where peritoneal surface comes into contact with raw surface, good closure may be obtained by rotating the cut bowel so that the two raw mesenteric surfaces will be brought into contact with a peritoneal surface of gut.

In the author's technique the bowel ends are crushed by forceps in such a way that when they are opposed the mesenteric angles will not be opposite. The ends are then sutured by through and through stitches, gross soiling being prevented by clamping the bowel with rubber clamps at short distances from the openings. This suture line is covered by seromuscular stitch, the posterior layer of which was inserted before the through-and-through stitch.

MAURICE H. HOMART, M.D.

Laquett: A Procedure to Facilitate the Execution of the Connell Stitch (U procédé facilitant l'exécution du point de Connell) *Presse méd. Par.* 9-2-33, n° 35

The decisive tags of the Connell intestinal stitch is the slowness of its execution. The author believes it can be simplified and made more rapid by the use of proper instruments. By employing Judd forceps and by punching up folds of the intestinal wall, the four manoeuvres of the stitch may be reduced to two, but this is not quite satisfactory if the wall is thick, as in the stomach, and is difficult when corners are to be turned. On a suture service they do use a special 7-cm. needle with two triangular points and a central eye which as designed by Becat and can be employed very easily with the left hand.

Suturing is begun at one end of the gutter by holding the needle between the left index finger and thumb by the rounded portion between the eye and point. With the other point of the needle the wall of the gut is transfixed from without inward up to a point where the eye arrives at the wall. Then the part of the needle which has passed through the wall is grasped by the right hand and the needle is drawn completely through without changing hands. The needle point which has just come through is turned backward through the same wall, but this time from within out. As soon as it has traversed the gut it is grasped with the left hand to pull it through. The opposite wall of the gut is sewed in the same manner the hand action being reversed. In this manner the use of a directing forceps to hold the tissues is rendered unnecessary. The assistant picks up each wall alternately and presents it to the operator's needle point. When once the habit of changing hands automatically has been acquired, the ease and rapidity with which the Connell suture may be placed is astonishing. KILGUS SMITH, M.D.

Foucar H. O. Intermittent Duodenal Obstruction in Children. *Med. Clin. N. Am.* 9-3-33

Two cases of intermittent duodenal obstruction in children are presented to direct attention to the pathologic conditions found in the upper gastrointestinal tract, other than the stomach, which may be associated with recurrent attacks of vomiting.

CASE. The patient was a boy 3 years of age who was brought to the Clinic because of attacks of vomiting which began when he was one week old and recurred at irregular intervals three or four times a year each attack lasting one to three weeks, during which time the vomiting occurred from 1 to ten times daily. The vomiting was projectile and copious, and without relationship to meals. There was also cramp-like aching referred to the region of the umbilicus. This condition as complicated by bronchopneumonia of four months duration.

Examination of the gastro-intestinal tract including roentgen-ray study was negative. One week later during a typical attack, the stomach was seen

to be dilated and peristaltic waves were present. Fluoroscopic examination revealed a definite obstruction in the duodenum 15 cm. from the pylorus. A diagnosis of intermittent duodenal obstruction was made and surgical intervention was advised.

Operation disclosed an extensive chronic adhesive peritonitis which had matted the small intestines together. The cause of the attacks was found to be recurrent obstruction of the jejunum which, because of the adhesions, also closed the duodenum. Because of the early onset of the symptoms, it was concluded that the adhesions were the result of fetal peritonitis. The adhesions were freed, and the patient has had no further trouble.

CASE. The history of this case was similar to that of Case 1, the essential points being the early onset of recurrent attacks of vomiting with definite peristaltic waves visible in the epigastrium. The patient was a boy 18 months old. When the child was first seen, in an interval between attacks, the examination of the gastro-intestinal tract was negative. Two weeks later he began vomiting and peristaltic waves were visible. A diagnosis of intermittent duodenal obstruction was made.

At operation no actual obstruction was found, but the mesentery was edematous and markedly thickened by enlarged lymph nodes. The mechanism in this case seemed to be transitory obstruction due to inability of the intestines to adjust themselves because of the thickened mesentery.

H. O. FOUCAR, M.D.

Hoddy G. P. B. Duodenal Diverticula, with Report of a Case of Gangrenous Diverticulitis. *Lancet*, 9-3-33, 37

Duodenal diverticula may be congenital or acquired. Congenital pouches constitute only a small percentage of duodenal diverticula. The acquired form may be the result of traction from without or of pressure from within associated with local weakness of the duodenal wall.

The diverticula may arise from any of the three portions of the duodenum, but the majority are found in the second portion on the postero-internal aspect, in close relation to the ampulla of Vater. From its duodenal origin, the pouch may extend in any direction, but most commonly extends inward toward the concavity of the duodenum where it comes into close relation with the pancreas. The size of diverticula ranges from that of a pea to that of a hen's egg. The average size is that of a walnut.

The diverticular wall is thin. In the true congenital type of diverticulum it is composed of all the layers of the duodenum. In the more common false or acquired type it is composed of pancreas in which Brunner's glands are usually absent. The muscularis is well defined at the base, but deficient over the rest of the sac.

Duodenal diverticula probably occur in from 1 to 2 per cent of human beings. They may be formed at any age but are most common after the age of 50 years.

The pathologic conditions which may be superimposed upon diverticula are acute or chronic diverticular inflammation, chronic duodenal catarrh and pancreatitis, duodenal dilatation, and obstruction of the biliary and pancreatic ducts.

Usually these pouches cause no physical signs or symptoms. The diagnosis is made only when there is a superimposed pathologic condition.

As a rule the absence of symptoms renders treatment unnecessary. If the pouch is discovered, the treatment is invagination if the diverticulum is small and excision if it is large.

SAMUEL KAHN, M.D.

Mackertzi M. A. Cancer of the Duodenum
(Zur Frage ueber den Krebs des Duodenums)
Newy Chr Arch 9 3 11, 586

Carcinoma of the duodenum is very rare. The author reports a case in which recovery followed resection and cites the literature regarding the pathologic anatomy, the symptoms, and the operation. Treatment. Operation has been performed in twenty cases of carcinoma of the papilla of Vater and in two cases of periampullary and cases of suprapapillary and one case of prejejunal carcinoma. In the cases of suprapapillary carcinoma consisted of palliative gastroenterostomy. SCHLACK (Z).

Koch, K. Resection of the Duodenum Ulcer at the Papilla (Duodenalresektion Ulcus ad papillam)
Reichschr chr gynäk 9 3 4, 57

In resection of the duodenum, experience and training are of very great importance. The surgeon must be of the opinion that there is no duodenal ulcer which cannot be resected. In the Bratislava clinic resection is regarded as the method of choice in chronic cases.

The operation may be divided into three parts: viz. dissection, care of the duodenal stump and anastomosis. For the dissection there are no rules except that it must be done according to the indications of the particular case. Closure of the duodenum is done by the method of Kostly. The serosa is sutured sagittally over the stump so that a small part of the stump remains uncovered. Over the latter part is placed the head of the pancreas. Anastomosis is done by the Kroenlein-Reichel-Pölya method.

The author reports two cases of ulcer at the papilla. In the first it was possible to conserve the papilla since the lesion lay below it, on the anterior wall of the intestine. The obliquely sutured duodenum had the appearance of continuation of the choledochus.

In the second case typical stenosis had been present for fifteen years. The occasionally stenosed papilla was resected and the choledochus then implanted into the duodenal stump. The pancreatic duct which was embedded in scar tissue, could not be dissected out and was therefore sutured with the parenchyma. Both patients make a quick recovery. KOCH (Z).

Foss, H. L. Meckel's Diverticulum and Intestinal Obstruction *J Am M Ass* 923, 1909, 99

Meckel's diverticulum is an embryonic remnant which is present in about 5 per cent of all persons. It consists of finger-like projection extending from the surface of the small bowel for distance of from 1 to 25 cm and is found throughout the lower 6 ft of the ileum. The responsible factor is failure of the vitelline or omphalomesenteric duct to atrophy, which normally occurs about the third month of intra uterine life. The remains of the obliterated blood vessels which once accompanied the duct may form a cord-like attachment between its tip and the abdominal wall, especially the umbilicus. These bands are often responsible for knotting of the diverticulum which results in intestinal obstruction. The diverticulum is subject also to inflammation and suppuration which produce a syndrome usually mistaken for that of acute appendicitis. In every case of acute intestinal obstruction the possibility that a Meckel's diverticulum is responsible should be considered. As a rule this cannot be differentiated from other causes of obstruction such as volvulus, intussusception, adhesions, etc. It should be looked for in every case diagnosed as acute appendicitis in which an apparently healthy appendix is found at operation.

Foss reports case of his own in which diagnosis of acute intestinal obstruction through the obvlus of the ileum was made. This case presented acute abdominal symptoms, a small spherical mass just beneath the umbilicus. Operation revealed a volvulus of 3 ft of the lower ileum due to a Meckel diverticulum which was attached by its tip to the root of the iliac mesentery and formed an arch under which loop of ileum had become strangulated. Resection and an end to end ileocolostomy were done. Convalescence was uneventful. C. J. GLASSER, M.D.

Vance B. M. Traumatic Lesions of the Intestine Caused by Non Penetrating Blunt Force.
Arch Surg 9 3 11, 97

The author reports twelve cases that came to autopsy. While they are too few to permit the deduction of definite conclusions, they present certain facts worthy of emphasis regarding the anatomical and clinical peculiarities of intestinal injuries caused by blunt force.

The intestine may be crushed, torn, or burst by pressure from within. In many instances the mechanism of the violence may be recognized both from the clinical history and the anatomical findings at operation or autopsy, but in other cases conclusions cannot be drawn with the same degree of certainty. In the cases reviewed, death resulted from intra-abdominal hemorrhage whenever there were associated mesenteric and visceral injuries. Most of the deaths, however, were due to peritonitis. In two cases in which the duodenum was perforated a retroperitoneal cellulitis developed.

It is apparent that the treatment of these injuries is very unsatisfactory. The mortality is high but

most all persons with such injuries die if they are not operated upon. Berry cites only 1 entity—survivors in 114 cases treated surgically and Tschustermendoff only eight recoveries in forty seven cases. The longer the operation is delayed after the injury the less the chance of recovery. Therefore prompt recognition of the condition is of great importance.

A very slight blunt force is sufficient to cause an intestinal injury and various circumstances may arise which will delay the appearance of the characteristic clinical signs. Therefore in all casualties in which there is a possibility of violence to the abdominal parietes the possibility of rupture of the intestine should be borne in mind and the case treated accordingly.

It is the opinion of the staff of the first surgical division of Bellevue Hospital that exploratory laparotomy should be performed in every case of blunt trauma in which it is impossible to exclude an injury to hollow viscera. Under these circumstances operation is deferred only if the patient is so nearly moribund or in such shock that surgical treatment would itself prove fatal. The absence of the signs of abdominal distress shortly after injury does not contraindicate surgical interference as it does not necessarily prove the absence of dangerous abdominal lesion. The policy of early operation may not be successful in every instance, but its advantages outweigh any possible disadvantages.

CARL D. VERMOLD, M.D.

Aaron, C. D. The Treatment of Spastic Constipation. *Am J Med Sci* 93 Jan 86

Spastic constipation is less common than tonic constipation but both forms may be associated. The increased irritability of the vegetative nervous system may be due to disease of abdominal or pelvic organs. Vagotonia induces spasm of the circular muscles of the intestines and contraction of the colon. A spasm of a few isolated loops of intestine retards evacuation. Spasms of the large intestine occur most frequently in the transverse colon, the hepatic, splenic, and sigmoid flexures, the rectum, and the anus.

The characteristic symptoms of spastic constipation are delayed fecal discharge and intestinal colic, usually preceding defecation and associated with varying degrees of abdominal pain with or without meteorism affecting the entire abdomen or only certain portions of the intestine. The pain may continue for hours and terminate with large evacuation. On palpation the descending colon and sigmoid flexure feel like a thick rope. There is frequent desire for defecation, and evacuation is incomplete. High grade spastic contraction is not permanent and hence is compatible with the forward movement of intestinal contents. Spastic and atonic conditions may alternate. There may be retention of feces in the ascending colon and spasm of the transverse colon. When prolonged haustral segmentation occurs, the feces are formed into irregular

balls, while in proctospasm the feces are cylindrical or ribbon like.

Spasticity of the colon is more common in women than in men, probably because of social conditions, the nervous strain on women of the higher classes and the causal relation between intestinal function and female pelvic disease.

It is easy to differentiate contracted from a full intestine by physical examination repeated at various times during the day and by X-ray examination. The presence of proctospasm is revealed by the tonus of the anal sphincter: the rectum fits tightly around the examining finger.

The treatment should include physical and mental relaxation: a complete rest in bed or a fresh air régime may be sufficient to induce normal defecation. The diet should be free from mechanically or chemically irritating foods and should be such as

will render the feces pasty and soft and the intestinal mucous membrane slippery. Cooked vegetables and fruits, easily digested fats, cream cheese, soft boiled or raw eggs, cereals mixed with cream, honey, etc. may be allowed. Atropine paralyzes the peripheral ends of the autonomic system and relaxes the spastic intestine. Papaverine and benzyl benzoate are valuable drugs. The use of glycerine enemas, suppositories, and most laxatives is contraindicated. Liquid petrolatum is tablespoonful doses three times daily may be tried. Flinner's oil emulsion are extensively used; these consist of an injection of 90 to 300 c.c. of pure olive oil at first given daily then on alternate days, and subsequently twice a week for a period of several months. The oil may be retained over night or may be given 600 m and retained for three or four hours. It lubricates the gut, softens the feces, and forms a protecting coat over the inflamed mucous membrane. Some of it probably breaks up into fatty acids and stimulates peristalsis. It causes practically no discomfort, but some patients have a sensation of tasting oil after an enema. If spontaneous evacuation does not follow retention of the oil, a small lukewarm soft water enema may be given. Abdominal massage is contraindicated but the application of heat may help to overcome the spasms.

WALTER C. BURKE, M.D.

Strass, A. A. Ulcerative Colitis. *Surg Clin N Y* 41 9 2, 31 33

Strass reports two cases. He believes it is impossible to cure an ulcerative bowel by diet and medication alone as long as the feces are passing through it, and that therefore medical treatment should be preceded by early surgical intervention to put the bowel at rest.

He recommends ileostomy followed in five or six days by irrigation through the distal loop of the ileum with 3 or 4 qts. of normal saline solution. He concludes he states that it is no more difficult or dangerous to do an ileostomy through a gridiron incision under local anesthesia than an appendectomy.

EARL C. ROBERTS, M.D.

Hughson, W. Chronic Ulcerative Colitis and Its Treatment. *Virginia M M J* 9 3 1, 304

The author discusses those cases of chronic colitis to which none of the usual causes can be assigned. The most probable predisposing factor in this condition is a lowering of the resistance of the colon due to bacterial infection, improper diet, or amoebic dysentery.

The extent of the disease depends upon its duration. At first there is chronic inflammation with superficial ulceration of the mucosa. As healing takes place scar tissue is formed and strictures may develop. Deep ulceration may lead to perforation. The diagnosis is made from the history of diarrhoea, abdominal cramps, the passage of mucus, blood, and pus, a loss of weight, and progressive prostration, and a systematic exclusion of all other types of dysentery.

As the disease begins in the rectum and the sigmoid portion of the bowel, the finding of the ulceration on proctoscopic examination will rule out cancer and syphilis. In the early cases the X-ray reveals an increase in the peristalsis but later the colon becomes a thick tube without haustrations.

A single form of treatment is successful in all cases. Irrigation of the colon with antiseptics and bland oils seems to be the most common method. The diet must be regulated to prevent fermentation. Surgical intervention is often necessary. Brown's ileostomy seems most feasible. Ileocolostomy and resection of the colon should be reserved for the more advanced cases. **WILLIAM J. PICKETT, M.D.**

Brown, P. W. Duodenal Enzymes in Chronic Ulcerative Colitis. *Med Cl N Am* 9 3 vii, 97

In a study undertaken to determine whether the duodenal enzymes are a factor in the biology of ulceration of the colon, the McIntire, Wilmore, and Reynolds method of determining enzymatic activity was used. It was found that the activity is high in chronic ulcerative colitis, and its degree seemed to bear a relationship to the activity of the disease. In one case in which an ileostomy was done the enzymatic activity of the discharge from the ileostomy wound was as low as that of the duodenal contents. This enzymatic activity plasma the digestion of the skin around ileostomy wounds and may be the factor causing ulceration of the colon if decrease in the resistive power of the wall of the large intestine is assumed.

P. W. BROWN, M.D.

Kolodny, A. The Fat Reactions in Appendicitis and Cholecystitis. *J Tex Med Soc* 9 3 301, 346

For some time pathologists have noted an accumulation of fat in the walls of chronically inflamed gall bladders and appendices.

In the appendix the fat is found deposited in the submucosa and is present in largest amount in the distal part where inflammation is most frequent and severe. Associated with these intramural deposits

of fat is an extramural reaction consisting of an increase of fat in the mesentery.

In all cases of cholecystitis, accumulations of fat were found in the subserous layer of the gall bladder thus accounting for the characteristic yellow color. These deposits, like those in the appendix, do not depend upon the patient's state of nutrition and do not disappear in starvation.

In gastric and duodenal ulcer and chronic gastritis, deposits of fat were found in the subserous layers of the stomach and duodenum: 40 per cent of the cases. In cases of salpingitis no such deposits were discovered.

This difference between the organs of the digestive tract and the fallopian tubes may be explained by the difference in the composition of the blood plasma circulating in their walls due to the high fat content of the blood of the portal system.

The prominent difference in fat deposits between the gall bladder and appendix on the one hand and the stomach and duodenum on the other is explained by the weak peristalsis common to the appendix and gall bladder which leads to congestion and results in the deposition of fat from the blood of the portal system.

There is little evidence to prove that these fatty deposits are a compensatory function or an attempt by the body to protect the surrounding organs from threatened perforation. As lipoids readily absorb toxins, the more reasonable explanation appears to be that they accumulate in an organ to protect the cells of that organ from toxic injury. The correct explanation will probably be found only when the physiology and chemistry of the lipoids become better understood. **CYRIL J. GLAZIER, M.D.**

Macdonald, C. Acute Sigmoditis Perforation and General Peritonitis Following Rectal Injection. *Med J A Straits* 9 3.

The patient whose case is reported had had obstinate constipation for years. Ten days after eating very heavy meal he awoke with severe abdominal pain, diarrhoea, and tenesmus. The stools contained no mucus or visible blood and there was no evidence of peritoneal irritation. The administration of ipecacuanha and opium was followed by improvement but two days later the symptoms became more severe and the stools showed gross blood. Without orders from a physician, he was given rectal injection of soap and water. The patient stated that during this procedure he heard a click as if something had burst. The symptoms of generalized peritonitis followed almost immediately.

At operation, few hours later the descending and the pelvic colon were greatly thickened and edematous, and pinhole perforation was discovered about the middle of the sigmoid. The peritoneal cavity was filled with intestinal contents. There was no evidence of malignancy or constriction. The patient died twelve hours later.

CARL D. NEEDHOLD, M.D.

Hayem, M. I. A Modification of Lambret's Colostomy (Modification au procédé d'unus ilaque de Lambret) *Bull. clin. Soc. de chir. de Par.* 9 3 212, 414

In Lambret's method of performing a colostomy the inguinal incision is mobilized and divide the pelvic colon as made below the pedicle of the flap. Consequently the blood supply of the pedicle is insufficient to resist the inevitable infection from the open intestine.

For a satisfactorily functioning artificial anus the flap must remain supple and well nourished. Therefore in Lambret's modification of Lambret's method the pedicle of the flap is internal and below. The inguinal incision through which the intestine is mobilized and divided serves as one side of the flap and hence will not cause anemia of the pedicle.

The operative technique consists in the mobilization and aseptic division of the pelvic colon through a 10-cm. iliac incision parallel with the inguinal fold. The lower gut stump is abandoned. The blood supply of the upper stump is mobilized for an extent of from 1 to 5 cm. A quadrilateral flap of skin and subcutaneous tissue with sides measuring 5 and 3 cm. respectively is cut by extending the first incision outward 5 to 7 cm. then short distance perpendicularly upward, and finally in and for 1 cm. parallel with, and above the first incision. Thus the pedicle is on the inner side below. With the index finger inserted in the abdomen an orifice is prepared corresponding to the center of the hinge, but 1 cm. outside and 1 inch point. The upper end of the colon is externalized. The first abdominal incision is sutured by layers. The seromuscular coats of the intestine are transfixed at several points to prevent retraction of the bowel. The skin opening, which is reduced to a lozenge shape with the long axis vertical, is sutured transversely and the crown of the externalized intestine is attached at several points to the edge of the skin sheath. The opening is closed by pressing the intestine against the plane of the abdominal wall by means of bandages around the waist.

The author has employed this procedure very successfully in two cases.

WALTER C. BURKETT, M.D.

Widdowits, P. The Treatment of Rectal Prolapse in Children by the Prone Position (Die Behandlung des Mastdarverfalls der Kinder mittels passiver Bauchlage) *Munchen med. Wochenschr.* 925 122, 590

The pelvic floor in infants shows an ontogenetic weakness on account of the absence of the sacral excavation and the fact that the forward rotation of the pelvis has not yet taken place. It is adapted to the static functions of the quadruped but not to the functions of the primate which carries the entire weight of the intestines in the erect position. In the presence of pathological conditions it may be even less developed. Therefore in cases of rectal prolapse it is desirable after reposition of the prolapsed bowel

and the application of a spica, to keep the infant as much as possible in the prone position, the position normally assumed by the young of quadrupeds. After from 1 to three weeks healing will be sufficiently far advanced for the gradual resumption of the supine position. BURKETT (2)

Bols, L. A. The Importance of Proctoscopic Examination. *Med. Clin. N. Am.* 9 3, vii 3

Patients with rectal diseases often present themselves early and are treated without diagnostic examination, the condition thereby being permitted to become advanced before its nature is determined. Cancer of the rectum is frequently discovered during an operation for hemorrhoids. Examination of the rectum is not difficult, but proper use of the proctoscope requires experience.

There are many types of proctoscopes. Each operator must select the instrument which he finds most suitable. At the Mayo Clinic modification of the Beach proctoscope is used. Dry cells with connected rheostat are best to supply the current for the light. An insulating attachment, such as necessary in certain cases, should be employed as infrequently as possible and then with great care. The Hirschman anoscope is invaluable for the examination of the lower rectum and anus. Local anesthesia is seldom, if ever necessary. General anesthesia should never be used.

The evening before the examination no supper should be allowed, and a castor oil should be administered. The morning of the examination the patient may have light breakfast, and cleansing enema should be given until the water comes clear.

The knee chest position is satisfactory for most work, or the Sims position if the patient is weak. The Haynes proctoscopic table places the patient in an ideal position. A digital examination should always precede proctoscopy and should be done carefully with the finger coat lubricated with non-irritating substance. The relative position of the anus and the rectum and the curves of the rectum and the sigmoid should be kept in mind. The proctoscope is passed through the anus first and the obturator then withdrawn. The remainder of the examination is carried out under direct observation.

Care must be taken not to make undue pressure against the mucous membrane at any time. Posteriorly the metallic edge of the proctoscope may strike the mucous membrane against the sacrum and cut through it. Anteriorly, pressure produces pain on the mesosigmoid which causes cramping. The patient is then unable to void straining down, which makes further proctoscopy impossible. The proctoscope should be carefully directed through the lumen of the bowel and the inflector should be used when it is impossible to proceed in this manner. Too great pressure should be avoided because of the possibility that the interference is due to the pathological condition rather than an anatomical irregularity.

While it may not be feasible for the general practitioner or general surgeon to become thoroughly

versed in the appearance of all rectal lesions, the appearance of the normal mucous membrane can easily be learned and enough can be made out on proctoscopic examination to rule out serious disease situated above hemorrhoids about to be operated on or to warrant referring the patient to proctologist.

L. A. BUIX, M.D.

Lefebvre, C. The Surgical Physiology of the Large Intestine (*Physiologie chirurgicale gros intestin*). Arch. franc. belge de chir. 9, 3, xxvi, 5.

The surgical indications to be drawn from the physiology of the large intestine are as follows:

1. Every effort should be made to preserve the function of the ileocecal valve. A cecostomostomy is better than an ileostomostomy.

2. If resection is necessary, anastomosis will be advantageously effected by creating an artificial valve—for example, by Keillogg's method.

3. In operations upon the colon the surgeon should bear in mind the utility of the proximal colon, such as the veritable stomach, and sacrifice it only if absolutely necessary. In cases of chronic intestinal stasis a drainage anastomosis should be tried before colectomy is done.

In the author's opinion a cecostomostomy answers the requirements best as it preserves the ileocecal valve, drains the colon well, and preserves the digestive function of the proximal colon. Preservation of the distal colon is less important.

W. A. BROWN.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Higgins, C. C. Observations upon the Phenol-tetrachlorophthalein Test for Liver Function. *Ann. Clin. Med.* 9, 3, 30.

The most satisfactory method of determining liver function is the phenol-tetrachlorophthalein test as modified by McNiel. In this procedure, duodenal tube is introduced after twelve hour period of starvation. When the tube is in the duodenum, as evidenced by a steady outflow of bile stained fluid, the rate of sixty to eighty drops per minute, solution of 50 mgm. of the dye in 5 c.c.m. of sterile water is injected intravenously and the bile flow collected in bottles for to three hours. The first appearance of the dye is indicated by pink tinge when few drops from the dripping tube are allowed to flow into 40 per cent sodium hydroxide.

The time of the first appearance of the dye of the maximum change of color and of the disappearance of the dye are recorded.

The liver functioning normally eliminates phenol-tetrachlorophthalein in from eighteen to twenty to 30 minutes the maximum elimination is reached in approximately eighty minutes and the dye disappears in from one hundred and twenty to one hundred and forty minutes.

In cases of cholecystitis, catarrhal jaundice, cholangitis, and chronic passive congestion of the

liver the time of the appearance of the dye was between thirty five and forty minutes, while in cases of gall duct obstruction it was between seventy and ninety minutes. These results show that when the liver and bile ducts are diseased and when circulatory barriers are present there is definite inability to eliminate the dye normally, the diminution in the total output and the delay in the initial time of output running parallel with the destruction that has occurred in the liver.

The beneficial effect of surgical drainage of the biliary tract is evident in most of these cases, especially those with stagnation. Such drainage is followed by an increase in the quantitative elimination of the dye and is earlier initial appearance.

CYRIL J. GLASPEL, M.D.

Specht, O. Animal Experimentation on the Influence upon the Secretion of Bile of the Administration of Fluids, Preparations of Internal Secretory Glands, and Various Drugs (*Thierexperimentelle Untersuchungen ueber die Beeinflussung der Gallenabsonderung durch Foeederung der Praeparate innersekretorischer Druesen, sowie einzelne Medikamente*). *Beitr. H. Chir.* 9, 3, cxviii, 140.

Up to the present time research on this subject has been carried out only by physiologists and in terms and many of the reports on the influence of the administration of fluids are contradictory. With regard to the effect of the internal secretory preparations the investigations have dealt only with adrenalin and pituitary extract. Specht's experiments were made on five dogs. A complete biliary fistula was established mainly according to Pawlow's directions but the choledochus was sutured to the skin to form a skin fistula. In most cases the gall bladder was allowed to remain. The food given the animals during the period of experimentation consisted usually of potatoes and other vegetables and bread. Meat was never given unless for the express purpose of the experiment. Beyond the amount of water contained in their food, the animals received no fluids.

The secretion of bile in the five dogs was about equal when similar food was given and even when there were marked variations in the amount of food. Only the feeding of meat caused a decrease in the production of bile. An increase in the intake of fluids, whether milk or physiologically salt solution given by mouth, subcutaneously, or intravenously caused no greater flow of bile than following dry feeding.

Under normal conditions the amount of bile secreted at night was the same as that secreted by day. The amount secreted during different parts of the day varied little and in this also there was no change following the administration of fluids. Similarly the specific gravity of the bile was practically constant, and in the same animal the amount of solid matter did not vary as the result of any of the experiments mentioned. Further it was impossible to

Hayem, M. L.: A Modification of Lambert's Colostomy (Modification au procédé d'unas chaque de Lambert) *Bull et mem Soc de chir d'Par* 93, 131, 44

In Lambert's method of performing colostomy the inguinal incision to mobilize and divide the pelvic colon is made below the pedicle of the flap. Consequently the blood supply of the pedicle is insufficient to resist the inevitable infection from the open intestine.

For a satisfactorily functioning artificial anus the flap must remain supple and well nourished. Therefore in Lambert's modification of Lambert's method the pedicle of the flap is internal and below. The inguinal incision through which the intestine is mobilized and divided serves as one side of the flap and hence will not cause anemia of the pedicle.

The operative technique consists in the mobilization and aseptic division of the pelvic colon through a 10-cm iliac incision parallel with the inguinal fold. The lower gut stump is abandoned. The blood supply of the upper stump is mobilized for an extent of from 15 to 5 cm. A quadrilateral flap of skin and subcutaneous tissue with sides measuring 5 and 7 cm respectively is cut by extending the first incision outward 5 to 7 cm, then short distance perpendicularly upward, and finally inward for 1 cm parallel with, and above the first incision. Thus the pedicle is on the inner side below. With the index finger inserted in the abdomen an orifice is prepared corresponding to the center of the hinge, 1 cm outside and 1 cm up. The upper end of the colon is exteriorized. The first oblique incision is sutured by layers. The seromuscular coats of the intestine are transfixed at several points to prevent retraction of the bowel. The skin opening, which is reduced to a lozenge shape with the long axis vertical, is sutured transversely and the crown of the exteriorized intestine is attached at several points to the edge of the skin sheath. The opening is closed by pressing the intestine against the plane of the abdominal wall by means of a broad ligament around the waist.

The author has employed this procedure very successfully in 15 cases.

WALTER C. BURRIST, M.D.

Widowitz, F.: The Treatment of Rectal Prolapse in Children by the Prone Position (Die Behandlung des Mastdarmvorfalls der Kinder mittels passiver Bauchlage) *Urologische und Gynäkologische Zeitschrift* 9, 121, 390

The pelvic floor in infants shows an ontogenetic weakness on account of the absence of the sacral excitation and the fact that the forward rotation of the pelvis has not yet taken place. It is adapted to the static functions of the quadruped but not to the functions of the primate which carries the entire weight of the intestines in the erect position. In the presence of pathologic conditions it may be even less developed. Therefore in cases of rectal prolapse it is advisable after reposition of the prolapsed bowel

and the application of spica, to keep the infant as much as possible in the prone position, the position normally assumed by the young of quadrupeds. After from 10 to three weeks healing will be sufficiently far advanced for the gradual resumption of the supine position.

BRUNNEN (2)

Bale, L. A.: The Importance of Proctoscopic Examination. *Med Clin N Am* 93, 3

Patients with rectal diseases often present themselves early and are treated without diagnostic examination the condition thereby being permitted to become advanced before its nature is determined. Cancer of the rectum is frequently discovered during an operation for hemorrhoids. Examination of the rectum is not difficult, but proper use of the proctoscope requires experience.

There are many types of proctoscopes. Each operator must select the instrument which he finds most suitable. At the Mayo Clinic modification of the Beach proctoscope is used. Dry cells with connected rheostat are best to supply the current for the light. An inflating attachment, which is necessary in certain cases, should be employed as infrequently as possible and then with great care. The Hirschman anoscope is invaluable for the examination of the lower rectum and anus. Local anesthesia is seldom, if ever necessary. General anesthesia should never be used.

The evening before the examination no supper should be allowed and no food or drink should be administered. The morning of the examination the patient may have light breakfast, and a cleansing enema should be given until the water comes clear.

The knee chest position is satisfactory for most work, or the Sims position if the patient is weak. The Mayhew proctoscopic table places the patient in an ideal position. A digital examination should always precede proctoscopy and should be done carefully with the finger cot lubricated with non-irritating substance. The relative position of the anus and the rectum and the curves of the rectum and the sigmoid should be kept in mind. The proctoscope is passed through the anus first and the obturator then withdrawn. The remainder of the examination is carried out under direct observation.

Care must be taken not to make undue pressure against the mucous membrane at any time. Posteriorly the metallic edge of the proctoscope may strike the mucous membrane against the sacrum and cut through it. Anteriorly pressure produces pull on the mesosigmoid which causes cramping; the patient is then unable to stand or strain down, which makes further proctoscopy impossible. The proctoscope should be carefully directed through the lumen of the bowel and the inflator should be used when it is impossible to proceed in this manner. Too great pressure should be avoided because of the possibility that the interference is due to the pathologic condition rather than to an anatomical irregularity.

While it may not be feasible for the general practitioner or general surgeon to become thoroughly

the actual or functional removal of the gall-bladder as a reservoir. The constantly increased amounts of bile fats and bile alkalies in the intestine reflexly diminish the gastric secretion. The frequency with which inflammations of the gall-bladder involve the stomach and duodenum is dependent upon the common nerve supply and upon the intimate contact of these parts which is increased by adhesions formed in the course of gall stone disease.

TRÖNER (Z)

Dandéschat, E: The Effect of Cholelithiasis and Cholecystectomy on the Secretory Function of the Stomach and Duodenum (Der Einfluss der Cholelithiasis und der Cholezystektomie auf die sekretorische Funktion des Magens und Duodenums) *Beitr. Klin. Chir.* 93: 227, 1905.

In about two-thirds of the cases of cholelithiasis and cases treated by cholecystectomy there is a decrease or failure of the free hydrochloric acid. In small percentage, however, there is hyperacidity. The author has observed these disturbances in the acid secretion of the stomach no more frequently in cases with occlusion of the cystic duct than in those in which the cystic duct is patent. Nevertheless, he agrees with H. H. Weg and Schmidt that the chief cause of hypofunction of the gastric secretion is the functional or operative exclusion of the gall bladder. However, the fact that normal or even increased hydrochloric acid values are found in one third of the cases in spite of functional failure or removal of the gall bladder indicates that other factors also play a part. Comparative studies on the same patient before and after the removal of the gall bladder show that as a rule the pre-operative acid values persist after the operation, and that the achylia develops the lesions are usually irreparable. A change in the acidity is uncommon. The observation that in very small number of cases there may be a change from anacidity to normal hydrochloric values indicates that sometimes infection may be responsible for the occurrence of achylia in cholelithiasis.

According to Rovsing's theory, which attributes particular importance to the sphincter pylori, the sphincter remains continent and there is compensatory widening of the biliary passages in the presence of normal hydrochloric values, but in the presence of achylia there is incontinence of the sphincter and the biliary passages are of normal size. In the author's opinion this theory is incorrect as in the cases reviewed it was impossible to establish any law governing the width of the biliary passages on the basis of the acidity. In animal experiments achylia can be produced artificially by the removal of the normal gall-bladder. As studies in clinical cases of cholelithiasis and the findings of animal experiments indicate that the functional or operative exclusion of the gall bladder is of chief importance in this anomaly of secretion it is possible that cholecystectomy might have a favorable effect upon hyperchlorhydria and its sequelae.

CHURCH (Z)

Papin, F. Pyloric and Duodenal Stenoses Due to Gall-Stones and Their Surgical Treatment (Les sténoses pyloroduodénales dues à la lithase biliaire et leur traitement chirurgical) *J. de méd. de Bordeaux* 93: 207, 1915.

The author reports three cases of high intestinal obstruction due to large gall stones. This condition may result from the passage of the stones into the lumen of the duodenum, compression of the pylorus by no adherent gall bladder containing stones, inflammatory adhesions about the gall-bladder and duodenum, or pressure from hypertrophy of the head of the pancreas.

The surgical treatment of such cases is gastroenterostomy alone, cholecystectomy alone, or the two procedures combined.

LOYAL E. DAVIS, M.D.

Papin, F. Cholecystectomy for Lithiasis; Transverse Section of Three-Fourths of the Circumference of the Common Duct; Suture Cure (Cholecystectomie pour lithase section transversale des trois quarts du cholédoque suture guérison) *Bull. et Mem. Soc. de chir. de Paris* 93: 212, 1915.

During a very difficult operation for cholelithiasis Papin accidentally cut the common duct transversely for three-fourths of its circumference. Immediate suture was successful, and the patient recovered without severe complications.

In the discussion of this report Gosset emphasized the fact that stones of the common duct often escape detection clinically as they may not produce any typical signs, and that therefore in all operations for cholelithiasis a methodical examination of the bile ducts should be made. He recommended exposure of the cystic, hepatic, and common ducts preceding cholecystectomy to prevent their accidental injury. In a few uncomplicated cases he did complete suture of the common duct but later returned to drainage.

Hartmann stated that dilatation of the common duct does not always indicate a stone as it may be produced when the gall bladder is not functioning as a reservoir.

RUDOLPH MAXX, M.D.

Granfeldt, K. Subsequent Examination of Patients Operated upon for Gall-Stones in the Serafimer Hospital in the Period from 1891 to 1912 (Nachuntersuchung der von 80-19 im Serafimerlazarett operierten Gallensteinkranken) *Hygien. Stockholm*, 93: 122, 1915.

During the period from 1891 to 1912 there were 334 operations on 313 patients. The mortality was 5 per cent for the entire period and 1 per cent for the last five years. Recently it has been still further decreased by better judgment of the indications.

The patients were re-examined twice, in 1913 and 1914. One hundred and ninety-seven reports were received in 1913 and 12 in 1914. Of 103, twenty-two of the patients were dead, and in 1914 twenty-three more. The patient condition was good in 68 per cent of the cases, fair in 10 per cent, and poor

in 10 per cent. The results of cholecystectomy were considerably better than those of cholecystostomy. In six of eight cases in which cholecystostomy gave poor result a cholecystectomy performed later was successful. Ventral hernia occurred in 3 per cent of the cases, being caused possibly by the wide tampons used formerly. **Porter (2).**

Seitz, E. The Care of the Stump After Cholecystectomy (Zur Frage der Stumpfversorgung nach der Cholezystektomie) *Zentralbl. f. Chir.* 93, 1, 73.

In performing cholecystectomy the author severs the serosa by a median incision and enucleates the gall bladder on both sides. In the hollow between the liver and serosa formed by the suturing of the flaps of serosa he inserts an extraperitoneal drain down to the stump of the cystic duct. He does not claim priority in describing this procedure but calls attention to it because it is not generally used although very practical.

The median incision of the serosa is made in Bier's clinic in all cases in which the serosa is detachable, but as a rule no drainage is used. Generally the peritoneal sac is open to the bottom. The stump of the cystic duct is usually retracted from the funnel shaped sac on account of the scantiness of the serosa in this area. Any flow of bile which does not reach the exterior will become encapsulated and resorbed if it is small. The fevers (if these are caused by infection and gaseous tampons. In the author's opinion there is no such thing as an ideal cholecystectomy. **Hörner (2).**

Simon, L. and Schlegel, A. The End-Results of 226 Cholecystectomies and Eighty-Two Cholecholestomies from the Standpoint of Postoperative Complaints (Endergebnisse von 226 Cholezystektomien und 82 Cholecholestomien am Beispiel zur Frage der postoperativen Beschwerden) *Berlin. Med. Woch.* 93, 22, 65.

Of 33 patients subjected to cholecystectomy the authors were able to re-examine 140. Forty six of the latter had had cholecholestomy in addition. One hundred and twenty-four (88.6 per cent) are entirely well, and sixteen (11.4 per cent) have more or less discomfort. Of the latter five are subjected to simple cholecystectomy, and eleven to cholecholestomy with drainage. The persisting complaints are not dependent upon changes in the gastric juice. Some of them are due to gas colic. There are no indications of pancreatic disease although in twelve patients (eleven of whom survived) inflammation of the pancreas was found at operation.

When the pancreas was affected cholecholestomy was performed, even in the absence of stones or inflammation of the common duct. In four cases the epigastric complaint is evidently due to pancreatic condition as the stools show a high fat content and the diastase test is positive. In two cases the complaints are due to abscesses. Rupture of the scar occurred in eleven cases (seven median,

three undulating, and one pararectal incision) but only one of the patients complains of discomfort. In two cases the recurrent complaints are to be attributed to overlooked calculi. As discomfort followed simple cholecystectomy in only 5.7 per cent of the cases, but persisted after cholecholestomy in 3.9 per cent, the authors have recently sutured the cholecholests. In twenty-two cases so treated there was no further complaint. If cholecholestomy suture is impossible, cholecholestenotomy should be considered. **FRANKENBERG (2).**

Crisle, G. W. Special Points in Gall-Bladder Surgery. *Ann. Surg.* 93, 1, 9.

This article is based upon the experience of Crisle and his associates in 35 operations on the gall bladder. Their percentage of correct pre-operative diagnosis increased in direct relation to the amount of study devoted to the case by the roentgenologist. In Crisle's opinion it is doubtful whether any such diagnostic significance can be attached to the Ljén test.

Cholecystectomy yielded a higher percentage of postoperative symptom-free results than cholecystostomy. Since 19.7 and 84 per cent of the gall-bladder operations have been cholecystectomies and 6 per cent cholecystostomies. This corresponds approximately to the figures of the Mayo Clinic.

Cholecystostomy bears lower mortality and is the operation of choice for poor surgical risks. Morphine is contra-indicated in these cases because of its specific depressing effect upon the liver.

Crisle still hesitates to close a cholecystostomy wound without drainage. He prefers high Berman incision for ample exposure, and adequate packing with gauze to protect the general peritoneal cavity.

In the series of cases studied the mortality of cholecystectomy was 5 per cent and that of cholecystostomy 5.4 per cent. These figures make it appear that cholecystectomy is the safer operation, but this is due to the fact that cholecystostomy was performed in the cases that were poor risks.

The choice between cholecystectomy and cholecystostomy should be based on the patient's condition. **Crisle, J. GILBERT, M.D.**

Ljén, B. B. V. The Selection of Cases Which May Be Benefited by Intermittent or Continuous Medical Drainage of the Gall Tract, with Brief Discussion of Methods. *Internat. J. Surg.* 93, 1, 22, 55.

Five years ago Ljén first introduced his method for the more exact diagnosis of disease of the biliary tract. As is well known, it depends on the observation of Meltzer that solutions of magnesium sulphate applied to the duodenal mucosa permit the discharge of bile into the duodenum by relaxing the tonicity of the duodenal wall and Oddi's sphincter.

Ljén found it possible to recover through the duodenal tube fractions of bile which differed in physical, chemical, and microscopic properties. These A, B and C fractions of bile from the ducts,

the gall-bladder and the liver can be segregated by careful technique and allow accurate deductions of diagnostic value. The procedure has been termed non-surgical drainage of the gall tract.

In intermittent drainage the duodenal tube is passed and left *in situ* for from two to six hours and during this time 10 or three magnesium sulphate stimulations and one olive oil stimulation are given. As much bile as possible is recovered and the treatment is terminated by duodenal disinfection.

In continuous drainage the tube is allowed to remain in the duodenum for from several days to three weeks, with one stimulation of magnesium sulphate and olive oil daily to secure evacuation of as much bile as possible each day. Intermittent drainage can be carried out in the office; the patient at home, or the hospital.

Non-surgical drainage is indicated in acute cholecystitis, cholecystodochitis, chronic cholecystitis, quiescent cholelithiasis pre or post operative cholangitis, postoperative biliary fistula, empyema of the gall-bladder in which surgery is contra-indicated, bilious cirrhosis, pernicious anaemia and chlorosis, hemolytic jaundice, various toxic types of hepatitis, etc.

Continuous drainage is carried out best in the hospital or if the patient is at home, under the supervision of a trained nurse. It requires from two to four weeks. The author indicates it for the following conditions: catarrhal jaundice, arthritis due to gall bladder focus, cholecystitis in typhoid carriers, common duct stone of the ball type, cholangitis, etc. In many cases other biological factors demand treatment at the same time. Prior to duodenal lavage the mouth and respiratory tract must be disinfected. Some patients demand surgical relief after drainage has been carried out.

JOHN W. NICHOLS, M.D.

Sherrin J. Stone in the Common and Hepatic Ducts. *Lancet* 913, 1927

The presence of stones in the common or hepatic duct indicates the lack of proper and efficient treatment of previous gall bladder disease. Cholecystectomy. A medical treatment is known as yet which will remove the cause or destroy the gall stones. Treatment is still too frequently given for gastric lesions when the symptoms are due entirely to cholelithiasis. The calculi form primarily in the gall bladder but in the presence of infection and bile stagnation may increase in size and number so as to form a solid chain plugging the common and hepatic ducts. It follows then that stones found in the common duct have formed primarily in the gall sac or are overlooked at cholecystectomy.

A pre-operative diagnosis of common duct stone is possible only in the presence of typical attacks of colic associated with jaundice and rise in the temperature. Jaundice is now less present at some time. In the other series of 113 cases jaundice occurred in seventy-eight and in thirty-three it was present and severe at the time of operation.

Many stones may be present in the common duct without causing jaundice. In the majority of the author's cases there was a history of abdominal symptoms for years. Most of the patients came to operation between the ages of 45 and 55 years.

The treatment consists in the removal of the stones followed by cholecystectomy to prevent further stone formation. A shrunken gall bladder and a dilated cystic or common duct with or without history of jaundice strongly suggest the presence of common duct calculi. In such cases the author explores the common and hepatic ducts with a probe inserted through the stump of the cystic duct. It is advisable to dilate the ampulla of Vater. In only a few cases was it found necessary to open the duodenum to remove impacted calculi from the papilla. When it is enlarged by incision the stump of the cystic duct is closed with a continuous suture. No hardened catgut. Drainage is indicated when an infectious cholangitis is present or prolonged manipulation is necessary.

In five of the author's cases in which death occurred following choledochotomy, overlooked calculi were found at autopsy. Cases presenting obstructive jaundice with cholangitis are poor risks. For these Sherrin advocates a two-stage operation: the first stage consisting in drainage of the distended gall bladder or common duct and the second in cholecystectomy with removal of any calculi present in the ducts. In the 13 cases reviewed there were seven deaths. Nine of these occurred in cases of obstructive jaundice. None of the jaundiced patients died of hemorrhage. Three deaths were due to lung complications and the remainder to hepatic insufficiency coming on between ten and eighteen days after operation. JOHN W. NICHOLS, M.D.

McJannet, W. J. The Surgery of the Hepatic and Common Bile Ducts. *Lancet* 913, 1927

The common duct is discussed as a whole from the point where the hepatic duct emerges from the liver to the duodenal papilla, because the pathologic processes within which the surgeon is concerned in this special field must be treated as a whole.

In the period from December 31, 1900 to December 31, 1927 there were 3,587 operations performed on the biliary tract for all conditions, acute, chronic, and malignant by the eleven surgeons on the general staff of the Mayo Clinic. With an average mortality of 9 per cent. Of these operations, 1,920 were performed on the hepatic and common ducts with an average mortality of 7.8 per cent. In the ten years from 1900 to 1920 the average mortality of operations on the great bile duct was 6.8 per cent. In 1921 the mortality of operations on the common and hepatic ducts was 5.6 per cent and in 1922 7.9 per cent cholecystectomies it was 1.3 per cent.

All patients dying in the hospital following operation were classified, without regard to the length of time thereafter or the immediate cause of death, as having died from the operation. While it may

seem somewhat severe to classify as operative deaths those of patients who, when operated on, had chronic nephritis, hepatic insufficiency from biliary cirrhosis, and secondary cardiovascular disturbance, the result of months of cholemia and duct infection, and those of patients who died in the hospital some weeks after the operation from causes not connected with it, it is difficult to secure comparable statistics from different hospitals without an arbitrary standard of classification. Perhaps, too, there is a certain stimulation in holding to a high standard of responsibility.

A satisfactory improvement, so far as mortality is concerned as manifested by these data. Improvement has been greater than would be apparent from a study of mortality alone because of constantly increasing knowledge and improvement in technique. Because of a better understanding of the conditions, more and more severe cases have been accepted for operation and operations have been carried out successfully which in earlier days, were not attempted.

Certain fundamental principles which greatly affect the care of surgical patients must be evaluated. They concern (1) the mortality from the operation, (2) the benefit from the operation and (3) the disability following the operation.

The pride of the operator and his statistical skill in honestly juggling percentages mask most astonishing apparent differences in statistics which are nearly identical. For instance, the early transference of the dangerously ill patient to the medical side of the hospital because of medical complication is helpful from the standpoint of surgical statistics. If operations, rather than cases, are counted, and number of operations are performed on the same patient, small series of cases may make a large series of operations. Mortality estimated by cases is high, but estimated by the number of operations, is low, although the number of deaths would be the same. Again a slight operation which does not cure will be a test in an unfavorable case. If the patient does not react well, the curative procedure with the major operative risk may not, for many reasons, be undertaken and consequently the patient is not given the chance for cure which primary radical operation would offer.

A steady surgical tragedies and endeavor in every way to hold operative mortality at the lowest point, but the mere fact that patient recovers from an operation is not in itself sufficient. If he does not receive sufficient benefit to warrant the risk to life, the pain and suffering from the operation itself, the expense, and the loss of time, he has just cause for dissatisfaction. On the other hand, if more radical operation would have resulted in correspondingly greater benefit, an increase in the primary risk might have been justified.

The question of postoperative disability is important. A surgical procedure should be planned so that the patient will receive the greatest possible benefit with the least possible risk and loss of time.

Today industry is on full time basis and every day that the patient is unnecessarily disabled is an economic loss. To perform several operations when one would suffice and thus deduce an apparent but not a true reduction in the mortality to one type of incision not strictly indicated for the work at hand, or to use unnecessary drainage, such as to confine the patient to bed longer or leave him with greater liability to hernia, is unjust. This economic loss is illustrated by a comparison ten years intervals of the hospital morbidity following operations on the biliary tract. The methods in use today as compared with those used ten years ago save for each patient operated on in the Clinic ten days of hospital time or thirty six years of the lifetime of one person.

The incision used in the majority of operations on the biliary passages has been the incision introduced by Berran. 808 slightly modified. Dr. Arthur's recommendation to leave the posterior aponeurosis, the peritoneum and the nerves in the lower third of the incision undivided is followed because the posterior aponeurosis, peritoneum and nerves are sufficiently mobile to be drawn down readily by retractor.

Secondary operations on the common duct for the removal of stones may be most difficult, especially if the gall bladder is removed at the first operation, if dense adhesions bind the area or confined mass, and if state of hepatitis or biliary cirrhosis makes the liver bleed at touch.

The importance of removing all stones from the common duct cannot be overestimated. In nearly one third of the Clinic cases in which death followed operation on the common duct for stone, the post mortem examination revealed that not all of the stones had been removed. Since postmortem examinations are made on more than 90 per cent of patients who die in the hospital, this checking up has been of very great importance in adding to knowledge although often most humiliating to the surgeon. Perhaps some of the stones which are supposed to have reformed in the common duct are left over.

Next to gall stones in the hepatic and common ducts operative injuries during cholecystectomy are the most common cause for operations on the common duct. The most serious and difficult operations are those which have for their purpose the restoration of totally interrupted biliary connection between the liver and the intestinal tract. When injury of the common or hepatic duct has been recognized at the time the injured duct has been successfully repaired in every instance. From the standpoint of ultimate results, study of the operative methods employed in these cases indicates that in any case in which portion of the duct was accidentally removed and the injury was not discovered and repaired at the time thus necessitating secondary reconstruction, direct union between the stump of the hepatic duct and the duodenum is the best operation.

Of the causes of death after operation hemorrhage, hepatic and renal insufficiency and infection of the bile ducts are the most common. These conditions are directly related to the existing chronic obstructive jaundice, hepatitis, biliary cirrhosis, dehydration and chronic undernourishment. I review of the postmortem records for five year period of patients who died following operation on the biliary tract, Walters found that in 58 per cent of the cases with jaundice in which death occurred within the first week after operation there was more or less blood in the abdominal cavity usually the result of oozing from slight injuries to the liver. Of itself, the hemorrhage was not sufficient to cause death, but was a contributing factor. In the cases of jaundiced patients in poor condition, unless there is definite indication, cholecystectomy is not added to the risk of the operation on the common bile duct because of the danger of injury to the liver which adds to the possibility of slow postoperative oozing.

As these patients are dehydrated and usually unable to take much nourishment an attempt is made before operation to introduce a quantity of water into the system to aid renal elimination. As a rule it is difficult to accomplish this by mouth it is best done by proctoclysis or subcutaneously.

A third factor of importance in these cases is hepatic insufficiency which runs parallel with renal insufficiency. In the presence of hepatic insufficiency the blood sugar may appear to be at the normal level when it is not truly so because of the concentrated state of the blood from dehydration. Therefore, in the presence of hepatic insufficiency 5 per cent glucose in plain water is given by rectum or 3 per cent in sodium chloride solution is given subcutaneously.

In checking the hemorrhage calcium chloride given intravenously has proved effective, and in certain cases blood transfusion as a remedy of remarkable efficiency. Failure of normal blood clotting in the jaundiced patient is a specific indication of deprivation of blood calcium. It remained for Lee and Vincent to give calcium in a 10 per cent aqueous solution intravenously with striking result. When the administration of calcium fails to reduce the clotting time to normal blood transfusion will usually cause temporary reduction sufficient for operation.

The careful pre-operative management of jaundiced patients has greatly reduced the mortality of operations. In 11 years not a single patient in the Chase who prepared has died following operation. During 1913 there were only four deaths (6 per cent) in 50 operations on the common duct for stone infections, explorations, etc.

Moyzish, B. Secondary Operations upon the Biliary System. *Lancet* 1913, vol. 2, p. 344.

Moyzish states that approximately 30 per cent of the patients with cholelithiasis upon whom he operates have had previous operations for gall stones. He believes that the majority of gall stones

are formed primarily in the gall bladder. The chief factors in stone formation are infection of the bile passages and an increased cholesterol content of the blood. Infection may reach the gall sac from the blood stream from the liver bile, from the lymphatic plexuses of the pancreas, etc. from the common duct through the duodenum or from adjacent viscera. In uncomplicated cases of cholelithiasis the cholesterol content of the blood tends to be high. Sixty per cent of Moyzish's patients have hypercholesterolemia. Secondary operations on the bile tract are necessitated most commonly by stones overlooked at the first operation. Moyzish inserts the first and second finger of the left hand through the foramen of Winslow and carefully palpates the duct between the thumb and fingers along its entire course.

Calculi in the ampulla of Vater are best treated by opening the duodenum and enlarging the ampulla with or without a curet of the duct edges to the duodenal wall to permit the passage of the stones in the bowel. Moyzish has made it a rule to drain all cases of multiple stones. In common duct obstruction due to stones there is cholangitis with frequent multiple stones and sand in the hepatic ducts. In such cases rubber catheter is passed through the ampulla into the bowel after the method of McArthur. This produces continuous dilatation and permits the administration of fluids. As much as 1 to 5 pts. of 5 to 5 per cent glucose solution plus sodium bicarbonate may be given by the drip method and will be well retained. The tube remains in the duct for from ten days to two weeks. It is often of antagonistic value to irrigate the hepatic duct with salt solution.

Another frequent cause of secondary biliary tract operations is primary injury to the common bile duct during cholecystectomy. The inviolable rule for gall bladder surgery must be: See exactly what you are doing and until you see do nothing.

Chronic pancreatitis may often lead to duct obstruction necessitating cholecystectomy or cholecystostomy.

Operations on deeply jaundiced patients must be preceded by adequate preparation. The greatest dangers are hepatic insufficiency and postoperative hemorrhage.

JOHN W. WATSON, M.D.

Lilienthal, H. Chronic Biliary Fast by Implantation of the Stomach into the Stomach. *J. Surg.* 1913, vol. 2, p. 765.

Lilienthal's case was that of a woman on whom a cholecystostomy was done in 1917. For 1 year after this operation the patient was free from symptoms but she began to have epigastric pain radiating to the back. While he was in the hospital for another condition an cut it took of suppuration cholecystitis necessitated drainage. Later numerous stones were removed from the common and the hepatic ducts. Probing into the duodenum was not entirely satisfactory and as the patient's condition was not very good, he decided to terminate the

procedure. A closely fitting rubber tube was passed into the hepatic duct and fixed in place by fine chromic catgut suture.

As bile continued to drain from the wound for over two months, even after removal of the tube, an operation to close the fistula was done. The fistulous opening was circumscribed so that a collar of skin was left, and the sinus was freed from adhesions. A gastrostomy was then performed about 2 1/2 inches from the pylorus anteriorly and about one-third of the way from the lesser to the greater curvature and a straight needle carrying thick silk was plunged into the stomach through the greater curvature and brought out of the gastrostomy opening. The silk was fastened to the fistulous tract near the skin. The fistula with the sinus was drawn to the stomach by traction on the silk and fixed by four or five chromicized catgut sutures passed through the outer coats of the stomach. Further incision of the anastomosis was then made and maintained by suture. The silk was extracted through its place of entrance. The wound was closed in 3 layers with rubber dam drainage.

Bile appeared at the wound for 4 times but this leak was of short duration and the wound then healed promptly. There never was any icterus. The patient was greatly relieved, and 10 months after the operation was apparently well.

Libenthal believes that tubes in the common duct are apt to cause necrosis with scarring and lead to the formation of persistent fistula.

CLAYTON & ANDREW, M.D.

Glass, E. Persistent Pain as Characteristic Early Symptom in Acute Pancreatitis. (Der Dauer schmerz als charakteristisches Frühsymptom bei Pancreatitis acuta.) *Deutsche Zeitschrift für Chirurgie*, 93, 1917, 3.

In acute pancreatitis the symptoms of ileus, perforated gastric and duodenal ulcer, perforated appendicitis, peritonitis of the lesser pelvis, and mesenteric thrombosis are particularly apt to lead to false diagnosis. This is explained by the fact that the meso ganglion of the sympathetic nerve, which supplies all the abdominal viscera, is located in the immediate neighborhood of the pancreas and is irritated by the inflammation. The most important diagnostic sign is the presence of sensitive transverse zone of resistance in the epigastrium (Koerte) and persistent colicky pain.

The only form of treatment worthy of consideration is early operation for wide exposure of the pancreas without splitting of the capsule and special drainage of the lesser pelvis. BAKER, (2).

Fisher, A. G. T. Acute Hemorrhagic Pancreatitis. A Case Presenting Certain Unusual Features. *Bull. J. Surg.*, 9, 3, 1917, 29.

The occurrence of more than one attack of acute hemorrhagic pancreatitis in the same patient is rare. The author reports a case in which second attack occurred ten months after the first.

On May 5, 1917, the patient was operated upon for acute hemorrhagic pancreatitis presenting the classical symptoms. Dark blood was found in the peritoneal cavity particularly in the right kidney pouch. The lesser peritoneal sac also was full of blood. The pancreas was swollen and dark purple, and the body of the gland contained extravasated blood. The omentum showed fat necrosis.

On March 6, 1918, the patient was again admitted to the hospital complaining of sharp and stabbing pain in the epigastrium which was continuous but fluctuated. The skin was cold and clammy, the pulse rapid and of poor volume and the temperature subnormal. Striking features were peculiar leaden color of the skin and definite cyanotic tinge of the lips and face. The abdomen was generally distended, but the distention was most marked above the umbilicus. Examination of the chest revealed dullness of both lung bases and moist crackles.

On section the abdominal cavity was full of blood, but no obvious areas of fat necrosis could be seen. The large and small bowels were congested, and there was paralytic distention. The mesentery at its root and the lesser sac of the peritoneum were distended with blood clot. The pancreas was greatly enlarged by hemorrhage. The peritoneum of the posterior wall of the lesser sac was ragged opening. The introduction of the forefinger into this opening was followed by gush of blood. Drainage of the pancreas and lesser sac was followed by recovery.

HOWARD A. McKEOWN, M.D.

Petruschewski, G. F. Chronic Pancreatitis. (Zur Frage der chronischen Pancreatitis.) *Festschrift an Prof. Veldhorst*, 1917, 1918, 1919, 1920, 1921, 1922.

The author reports the cases of four patients who came to operation with severe icterus and colicky pains in the upper part of the abdomen. In two cases syphilis was probably the cause. In one, the condition was preceded by acute gastroenteritis, and in another by dysentery. The content of diastatic ferment in the blood was markedly diminished. All of the four cases were treated successfully by cholecystogastrostomy. The author is decidedly in favor of this method of diverting the bile.

PETROW, (2).

Deaver, J. B. A Clinical Study of Pancreatitis. *A. C. S. Surg.*, 1917, 14.

Deaver points out that little or no attempt is made to diagnose the common, milder lesions of the pancreas. The ability of the pancreas to carry on its work even in the presence of gross lesions renders diagnosis difficult until a very large portion of the gland has been destroyed or other organs have been invaded.

Routine autopsy findings show that chronic pancreatitis is not uncommon. In operations on the upper abdomen the head of the pancreas is frequently found definitely indurated.

Because of the close relation of the pancreas to the biliary ducts and lymphatics and to the lymph

phatics of the other intra-abdominal organs, the question of pathogenesis is important. The symptoms of pancreatitis are usually those associated with the bile passages. Functional tests are of value to obtain suggestive or confirmatory evidence. The diagnosis rests on the history and clinical signs.

The most important preventive of chronic pancreatitis is the early treatment of diseases of the upper abdomen. WILLIAM E. SHACKLETON, M.D.

Brann, A. D. Pancreatic Cyst. *Surg. Cl. N. Am.* 9, 3, 1915, 837.

A man 55 years of age who had had abdominal distress suggesting gastric ulcer for twenty-five years developed an abdominal tumor which completely filled the space from the ensiform to below the umbilicus. His weight decreased by 50 lbs. and the tumor which appeared cystic, continued to grow. No interference with pancreatic function was noted. The X-ray examination was negative.

Under general anesthesia the abdomen was opened by a long midline incision. A large thick-walled cyst of pancreatic origin was exposed. The stomach had been pushed up and the large bowel down. Two gallons of fluid were removed. As an attempt to take out the cyst was unsuccessful it was partially packed with iodoform gauze and two rubber drains were inserted. The wound was closed to the drain and a thick layer of zinc oxide ointment was spread over the skin to protect it from the pancreatic fluid.

The patient subsequently gained 50 lbs. The tube was left in and the interior of the cyst irrigated with a weak solution of iodine until it contracted. Then pure tincture of iodine was used every other day. Six months after the operation a small rubber tube was left in for drainage because it is better to drain too long than not long enough. The patient will be put on an anti-diabetic diet in the hope that this will hasten the closure of the cyst.

MARCUS H. HOSKAY, M.D.

Lindemann, W. J. Pancreatic Cysts (Ueber Pankrocysten). *Arch. Chir. Arch.* 9, 4, 43.

Pancreatic cysts are among the comparatively rare surgical conditions. Since the first case operated upon in the year 86 by Le Dentu, more than 100 cases have been reported. On the basis of Koert's classification, the author differentiates (a) true cysts including (1) retention cysts, (b) hemorrhagic cysts, and (c) proliferating neoplasms; (2) pseudocysts, cystic epitheliomata, and (3) false cysts consisting of encapsulated collections of fluid in the bursa omentalis or between the pancreas and the peritoneum.

Etiologically trauma is the chief factor to be considered. Trypan is of great diagnostic significance but the diagnosis is difficult. The treatment is solely surgical. The possibility of radical extirpation is limited. As a rule the cyst is opened and sutured to the abdominal wall. According to the latest statistics the mortality following the various operations is as follows: opening of the ligated cyst

4 to 8 per cent, entire removal of the cyst 18 to 24 per cent, partial removal of the cyst 44 to 55 per cent.

The author reports the case of a 53-year-old man who had had cardiac disease for the past seventeen years, and for the past ten years had noticed enlargement of his abdomen. Two years before he consulted the author he sustained an injury in an automobile accident which was followed by severe pain in the abdomen, weakness, loss of consciousness, the coming of fresh blood, and the appearance of blood in the stools. Later a large tumor developed in the abdomen with fever. Recovery was slow.

Upon the patient's entrance into the hospital he was suffering with cardiac failure, stenosis and insufficiency of the mitral valve and stenosis of the aortic valve. In the abdomen particularly in the left lower quadrant was a large elastic, somewhat movable tumor extending beyond the midline. Before operation this was considered to be either an echinococcus cyst of the liver or a cyst of the mesentery (the probable involvement of the pancreas). Laparotomy showed it to be a large cyst in the head of the pancreas containing blood pigment and cholesterol crystals. A small portion of the cyst wall was removed and the cyst drained through the abdominal wall. Microscopic examination of the removed portion of the cyst wall showed fibrotic connective tissue with necrotic masses on the inner side.

At the end of two months the patient was discharged with a fistula which secreted foul-smelling fluid. One and a half years later his general condition was good but the fistula was still present.

This was a case of benign true pancreatic cyst complicated by hemorrhage. SCHACK, (Z).

Scholes, T., and Pfeiffer, F. Roentgenologic Diagnosis of Carcinoma of the Tail of the Pancreas. *J. Am. Med. Ass.* 9, 3, 1915, 75.

The clinical picture in cases of carcinoma of the tail of the pancreas is so ill defined that a correct clinical diagnosis is made rarely, if ever.

In the two cases reported by the authors the roentgen ray findings were so characteristic of gastric malignancy that a definite diagnosis of carcinoma of the stomach appeared justified even though the clinical findings were not very typical of gastric lesion.

Roentgen ray examination reveals a permanent irregular outline defect in the middle portion of the greater curvature of the stomach, which is tender on deep pressure. Such an outline defect though usually characteristic of a neoplasm of the gastric wall, may sometimes be recognized as due to carcinoma of the tail of the pancreas if the roentgen findings are interpreted with proper consideration of the clinical aspects of the case. The main differential diagnostic feature in such instances is an obvious lack of agreement between the roentgenological and clinical manifestations, the latter showing a striking lack of direct gastric symptoms.

In the authors' cases the only clinical symptoms were diarrhea and an unexplained loss of weight.

procedure. A closely fitting rubber tube was passed into the hepatic duct and fixed in place by fine chromic catgut stitch.

As bile continued to drain from the wound for over two months, even after removal of the tube, an operation to close the fistula was done. The fistulous opening was circumcised so that thin collar of skin was left, and the sinus was freed from adhesions. A gastrotomy was then performed about 3½ in. from the pylorus anteriorly and about one-third of the way from the lesser to the greater curvature, and

straight needle carrying thick silk was plunged into the stomach through the greater curvature and brought out of the gastrotomy opening. The silk was fastened to the fistulous tract near the skin. The fistula with the sinus was drawn to the stomach by traction on the silk and fixed by four or five chromicised catgut sutures passed through the outer coats of the stomach. Further inversion of the anastomosis was then made and maintained by suture. The silk was extracted through its place of entrance. The wound was closed in two layers with rubber dam drainage.

Bile appeared at the wound for a time but this leak was of short duration and the wound then healed promptly. There never was any icterus. The patient was greatly relieved, and two months after the operation was apparently well.

Libenthal believes that it lies in the common duct rupture cause necrosis with scarring and lead to the formation of persistent fistula.

CLAYTON F. ANDERSON, M.D.

Glass, E. Persistent Pains as Characteristic Early Symptom in Acute Pancreatitis (Der Dauer-schmerz als charakteristisches Frühsymptom bei Pancreatitis acuta). *Deutsche Zeitschr. f. Chir.* 9: 1, 1915, 23.

In acute pancreatitis the symptoms of ileus, perforated gastric and duodenal ulcer perforative appendicitis, peritonitis of the lesser pelvis and mesenteric thrombosis are particularly apt to lead to a false diagnosis. This is explained by the fact that the main ganglia of the sympathetic nerve, which supplies all the abdominal viscera are located in the immediate neighborhood of the pancreas and are irritated by the inflammation. The most important diagnostic sign is the presence of sensitive transverse zone of resistance in the epigastrium (Koert) and persistent colicky pain.

The only form of treatment worthy of consideration is early operation for wide exposure of the pancreas, about splitting of the capsule and special drainage of the lesser pelvis. (RANGE 7)

Fisher, A. G. T. Acute Hemorrhagic Pancreatitis. A Case Presenting Certain Unusual Features. *Brit. J. Surg.* 9: 3, 1917, 79.

The occurrence of more than one attack of acute hemorrhagic pancreatitis in the same patient is rare. The author reports case in which second attack occurred ten months after the first.

forward, if necessary, and notes the degree and amplitude of any respiratory movements by watching a wisp of cotton affixed to the patient's nose or by auscultation.

3 Assistant N. immediately gives an intravenous injection in a convenient vein in front of the left elbow, beginning with 200 mils. of warm physiological salt or Ringer's solution to which 10 minims of a 1:1,000 solution of adrenalin have been added. As one-half minim of adrenalin is often ample and 1 minim would violently strain the heart the injection is instantly stopped by compressing the tube at the first evidence of return of pulsation. It is then continued from time to time only if necessitated by failure of the pulse. If the heart does not respond during the injection of the first 200 mils. of solution the injection is rapidly continued with successive additions of 15, 20, 30, or more minims of the adrenalin solution until a response is obtained.

4 Assistant No. assists the operator in inducing artificial respiration first by rhythmic compression of the chest, in and back, and down. He faces the patient's head and uses his hands and the inner side of his elbow and forearms. If the compression fails to move the tidal air he is warned by the anesthetist and without further delay immediately places the patient's head upon the right side, places a piece of gauze over the mouth, compresses the nostrils, and, filling his own lungs to the utmost, produces mouth-to-mouth insufflation, giving time for the air to escape between insufflations and by pressure over the upper abdomen preventing the air from distending the stomach. In children, care is necessary not to overfill the lungs. The use of the palmator or similar mechanical appliances in the cases of infants has been responsible for death several days later from rupture of the walls of the alveoli of the lungs.

5 The operator carries one hand well up under the left diaphragm and with the other hand over the chest, compresses the heart between both hands. From twenty to thirty compressions are made, the heart being well compressed and emptied

and quickly released. The efficiency of the massage is shown in the vessels of the neck. Often there will be no response until a sufficient quantity of solution has been introduced into the veins to carry the adrenalin through the heart into the coronary arteries. Cardiac massage stimulates the organ and relieves over-distention first emptying the old blood from the heart and then permitting the adrenalin solution to pass to the coronary vessels. With the first cardiac pulsation the beats usually increase rapidly in speed and as a rule no further efforts at massage are necessary if the respirations are well maintained. If the heart is large or so dilated as to be situated that effective cardiac massage is impossible the injection of 500 mils. of fluid with 4 mils. of strong adrenalin into the veins, thoracic massage, or direct injection of the heart should be used. For trans-thoracic massage a stab 1 in. long is made through the third left intercostal space, in to the left of the sternum. The index finger follows the knife through the chest wall, partially circles the left ventricle and is so hooked as to be able to compress the heart against the overlying wall of the chest. To prevent pneumothorax wet gauze is wrapped around the base of the finger and held over the opening when the finger is withdrawn. When other measures fail, from 3 to 60 minims of strong adrenalin solution may be injected by a fine long needle directly into the cavity of the left ventricle with care to avoid the internal mammary artery lying 1 mm. lateral to the sternum.

Nurse No. brings a sterile tray (always held in readiness) which carries a small funnel attached to 4 ft. of soft rubber tubing, a suitable connection and needle for intravenous injection, a scalpel, a ligature, a thumb forceps, a dropper, a reliable solution of adrenalin and hypodermic syringe with short and long fine needle. She supports the patient's right arm while the needle is being introduced, and aids in the injection.

Nurse No. brings the sterile warm salt solution, fills the funnel, and sees that the air is expelled from the tubing.

EDWARD L. CORNELL, M.D.

GYNECOLOGY

UTERUS

Parasarnoff O. Intestinal Uterine Fistulas and Their Treatment (*Zur Frage der Darm-Uterus-Fistel und ihrer Behandlung*) *Gynäcologische Abhandlungen* 9: 1

The author reports a case of intestinal uterine fistula operated upon by himself. The condition followed an induced abortion. Intestinal uterine fistulae are comparatively rare. It must be assumed that inflammatory and suppurative processes developing in the neighboring organs perforate into the uterus, especially when the uterine tubes have been injured.

Operation should be performed as soon as possible as these fistulae soon lead to general weakness. In the majority of cases the operation should be performed by the abdominal route. It is impossible to indicate any general method of operation as the technique must be adapted to the requirements of the particular case. If closure of the defect in the intestine is impossible the affected coil must be resected. In some cases the perforative opening may be covered by the omentum. *BLUMENFELD (2)*

Degrade. Cancer of the Neck of the Uterus Treated with Radium. Cure Maintained for Twelve Years (*Cancer du col de l'utérus traité par le radium, guérison maintenue depuis douze ans*) *Bull. Inst. Nat. Sec. de Chir. et Par.* 9: 3 11: 15

The author reports a case of cancer of the neck of the uterus which was of cauliflower shape and involved the vagina. According to the judgment of three well known surgeons it was inoperable. Applications of radium were made in three treatments in a period of six months. The technique is not described in detail, but was similar to that generally employed in modern practice. Repeated examinations for twelve years have shown no recurrence.

This good result is ascribed not alone to the type of cancer, but also to the systematic application of the radium which was continued regardless of the improvement following the first treatment.

In the discussion of this case Althel mentioned an analogous case of cancer of the neck of the uterus in which inoperability was revealed by laparotomy and subsequent radium treatment was followed by an apparently complete cure for eleven years.

REYNOLDS MAXX, M.D.

Navarro Blasco, F. Hysterectomy for Fibromyosarcoma Previously Irradiated (*Histerectomía por fibrosarcoma previamente irradiado*) *Arch. de med. ciruj. y especial* 19: 3, 11, 21, 22 de la Soc. querc. españ. 73

The author performed hysterectomy in three cases of fibromyosarcoma which had been treated by

irradiation. He believes that surgical treatment is clearly indicated in at least 50 per cent of all types of fibrosarcoma. Irradiation is not as harmless as many patients and some physicians believe since it may cause various complications and even death. In the majority of cases it is a blind method of therapeutics which sacrifices the uterus and ovaries.

In the three cases reported surgical intervention was necessitated because of the complete failure of the irradiation, and the operation was rendered more difficult than usual by the multiple lateral adhesions due evidently to the effect of the ray.

W. A. BARNARD

ADnexAL AND PERI-UTERINE CONDITIONS

Kennedy W. T. Radiography of Closed Fallopian Tubes. *Am. J. Obst. & Gynec.* 9: 3 71

Aldridge A. H. Insufflation of the Uterus and Fallopian Tubes. *Am. J. Obst. & Gynec.* 9: 3 72

KENNEDY has been filling the uterus and tubes with a 20 per cent solution of sodium bromide and radiographing that part of the genital tract which received the fluid. The pressure and the quantity which passed into the cavity have been noted. If the ampulla of the tube casts a shadow it must be connected with the uterus by patent isthmus even though the passage between contains no sodium bromide. If the ampulla of the tube does not appear in the roentgenogram there is an obstruction in the isthmus of the tube or in the corner of the uterus, or the tube has been removed. Kennedy reports in only cases with their roentgenograms. He draws the following conclusions:

1. A view of Sampson's or, roentgenogram should not be made in any case in which there is evidence of bleeding.

2. The degree of flexion of the body of the uterus can be determined if the position of the uterus is known.

3. The internal os can withstand pressure of 200 mm. Hg in the cervical canal without allowing the passage of the solution into the uterine cavity.

4. While permitting the sodium bromide solution to pass through their canals many uteri can overcome pressure of 200 mm. Hg and expel their contents in either direction.

5. Of the tubes examined, 30.8 per cent were occluded at the isthmus and 69 per cent occluded at the fimbria. Of the tubes casting shadow the isthmus appeared in 6 per cent and did not appear in 38.8 per cent.

6. The surgeon is able to determine the following points before opening the abdomen: (1) the length, breadth, position and direction of the canal of any

tube casting a shadow (2) the exact site of the occlusion, whether at the fimbria or in the isthmus, (3) whether a tube open at its isthmus and closed at the fimbria is empty and simply clubbed or filled with fluid, (4) whether an operation to overcome the obstruction and thus remove the sterility might be done with some chance of success when at least one isthmus is open, or would be almost useless when both isthmi are closed.

ALDRIDGE reaches the following conclusions on the basis of 600 cases:

1. The Rubin method to determine tubal patency is a simple and safe diagnostic procedure.
2. If the details in the technique are carefully controlled a definite opinion can be formed as to the condition of the tubes in approximately 85 per cent of the cases examined.
3. Patients should not be examined when near a menstrual period or in the presence of acute pelvic inflammatory disease or serious heart disease.
4. Insufflation is indicated in all cases of sterility in which a definite diagnosis of the cause cannot be made by manual pelvic examination.
5. Conditions associated with menstruation, uterine displacements, and ovarian and uterine tumors may cause partial or complete tubal obstruction and yet not be apparent on inspection.
6. The method is almost entirely diagnostic. Pregnancy follows insufflation in only a very small percentage of cases (nine cases).
7. Operative procedures which are done to open the tubes or to keep them open in cases in which both tubes have been involved in an inflammatory process are very often unsuccessful.

EDWARD L. CORWELL, M.D.

Donald A. The Clinical Aspects of Adenomyomas of the Female Pelvic Organs. *Proc Roy Soc Med Lond* 93 xvi Sect Obst & Gynec 8.

Adenomyomatous growths may develop in the uterus, round ligament tube, ovary or rectovaginal space. They are frequently associated with tarry cysts of the ovary. The author operated upon sixteen cases in one year. The chief symptoms are dysmenorrhea, pain or pressure in the rectum and dyspareunia. Examination usually reveals hard nodules or an irregular swelling in the posterior fornix. Indefinite resistance at one or both sides of the uterus may also be noted. The uterus may be retroposed or its mobility may be greatly limited.

Tarry cysts of one or both ovaries were found associated with the adenomyoma in eleven of the sixteen cases. In twelve cases panhysterectomy or subtotal hysterectomy was performed, the mass being dissected free from the rectum and the pouch of Douglas. In all of the cases the operation was somewhat difficult. There was one death, that of a patient whose pelvis was very widely infiltrated with the growth. Microscopic evidence of adenomyoma was found in every case except two. In the author's opinion these tumors are not as rare as was formerly believed.

HARRY W. FINE, M.D.

EXTERNAL GENITALIA

O'Connor V. J. Primary Carcinoma of the Female Urethra. Report of a Case Treated by Diathermy. *Urol & Cutan Rev* 933, XXV, 475.

Primary carcinoma of the urethra is very rare. The author was able to find only ninety-nine cases reported in the literature. Fifty cases reported as of this type he rejected because the lesion belonged to the group of vulvo-vaginal tumors.

Primary carcinoma of the urethra develops most frequently in the mucosa and is of the squamous-cell type and highly malignant. It is an epithelioma and must not be confused with carcinoma of the vulva and vaginal wall. It extends by way of the lymphatics up the inner side of the pubic ramus and into the inguinal nodes. Usually it is preceded by chronic inflammation or polypus.

Until recently the treatment has been surgical removal of the urethra together with the cancer-bearing areas, but as a rule this leads to structural mutilation and functional derangement and has not been justified by the end-results. Extirpation supplemented by radium treatment has been more satisfactory. In the author's case diathermy or massive electrocoagulation was employed, but the growth was too extensive for cure as extensive metastases had occurred. Radium was used as an adjunct to the diathermy. Locally the growth was entirely eradicated without loss of function of the urethra.

HARRY W. FINE, M.D.

MISCELLANEOUS

Haug, E. and Hendorfer K. Postoperative Adhesions Following Gynecological Laparotomies (Ueber postoperative Adhäsionen nach gynäkologischen Laparotomien). *Monatschr med Wchsch* 93, lxx 463.

In the Garré clinic Naegeli found that following abdominal operations adhesions could be demonstrated in 78 per cent of the total number of cases and in 92 per cent of those subjected to a severe operation. Martius, on the basis of his findings in thirty-three cases of repeated caesarean section in the Bonn clinic, assumes that adhesions occur least frequently after operations in the pelvic cavity whereas Loebner maintains the opposite view because of the prevailing absence of movement in this cavity.

The authors tabulate the findings with regard to adhesions in 336 cases in which laparotomy was performed for the second time. The first laparotomy was performed elsewhere in 14 cases, and in the Garré clinic in ninety. Of the patients operated upon in the clinic for the first time, 57 per cent remained free from postoperative adhesions, and of those first operated upon elsewhere only 10.7 per cent remained free.

The distribution of the adhesions was as follows: abdominal wall, 30 cases (51 per cent); omentum, 8 cases (54.4 per cent); genitalia, 243 cases (60.4

per cent) sigmoid, forty cases (74 per cent) parts of intestines other than sigmoid, 107 cases (45.5 per cent). It is an interesting fact that following vaginal operations no adhesions were demonstrable in 33.3 per cent of the cases.

The causes of the formation of adhesions before operation are the same as those of postoperative adhesions, i.e. inflammatory processes, mechanical and chemical injury of the peritoneum, and the irritation of an increased flow of blood in the peritoneal cavity. Operation may be followed by infection, failure of peritonization of the ligated stumps, serous defects, drainage, etc. The value of isolates in the prevention of postoperative adhesions is not very great.

Adhesions may undergo resolution spontaneously. Pregnancy may cause their disappearance. According to Payr they cause complications in only from 10 to 25 per cent of the cases and necessitate re-

operation in only 3.5 per cent. Complaints due to adhesions occurred in 9.6 per cent of the author's cases. The onset may be acute with adhesion ileus, or chronic.

For an exact diagnosis a careful pelvic and abdominal examination is necessary. Pneumoperitoneum is of great assistance. The treatment is difficult. Operation must be performed carefully. The use of sodium chloride solution or kaminal can not prevent adhesions. Possibly the early stimulation of peristalsis by enemata cathartica and intra-oesophageal injections of hypophysis may be of value. The suction massage of Kroh and the magnet treatment of Fyfe are rejected as being too severe. Diathermy and the external application of heat has a favorable effect. Occasionally diagnostic pneumoperitoneum is curative. The final resort is laparotomy but the cases must be carefully selected.

TENNISON (2)

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Stein, I. F., and Arena, R. A. Roentgenograms of the Fetal Skeleton as a Positive Sign of Pregnancy. *J Am Med Ass* 9 3 1931, 4

In contradiction to prevailing scepticism regarding the practical value of the roentgen ray examination of the fetal skeleton, the authors present the following conclusions:

The X-ray is the deciding factor in differential diagnosis between pregnancy and the abdominal enlargements, and in cases of pregnancy will reveal definitely the position and presentation of the fetus.

Before quickening the demonstration of the fetal skeleton is the only positive sign of pregnancy obtainable.

By pneumoperitoneum, the gravid uterus can be shown quite typically on the film during the early months of pregnancy.

The earliest roentgenogram of fetal skeleton was obtained three weeks before quickening probably between the third and fourth months of the gestation.

The authors caution against the estimation of the size and age of the fetus from the shadow in the film. The unstable position of the fetus and the distances of the parts from the film may lead to erroneous conclusions.

In case of breech presentation in which the roentgen plate gave apparent evidence of hydrocephalus, normal child was delivered.

From the sixth month to term the results are constantly satisfactory.

The authors suggest the use of the bacoma to condense the small, faint fetal shadows.

Their technique is carefully explained and the best for various exposures is given.

C. FRANK J. VAN NED

Hammah, C. R. Weight During Pregnancy. *Tex State J Med* 9 3 1931, 24

From his study the author concludes that in the cases of one whose weight is near the standard at the beginning of gestation the gain in reproduction should not be more than 15 lbs. Women whose weight increases more over the reproductive period manifest pre-eclamptic symptoms such as headache, oedema, increased blood pressure, etc.

Increased gain aggravates such conditions as heart lesions, hypertension, renal disturbance, epilepsy and psychoses.

The control of the weight in pregnancy shortens the duration of labor and is an excellent treatment for uterine inertia.

HARRY W. FINE, M.D.

Rosmak, G. W. Fibroid Tumors Complicating Pregnancy and Their Treatment. *Am J Obst & Gyn* 9 3 1931, 63

The presence of a terine myoma or fibromyoma during pregnancy calls for the most careful observation of the existence of local necrosis. If this is diagnosed from the presence of fever and an increased white cell count operation should be considered either a myomectomy or a hysterectomy. Operation should be considered also when a tumor is situated in the lower uterine segment and may possibly interfere with delivery because of its failure to rise out of the pelvis during the last two weeks before labor or in the early stages of labor. Exploratory operation is always possible and frequently myomectomy with satisfactory suture of the wound in the uterus may be done without causing abortion if the patient is deeply anesthetized. Even if abortion occurs, the uterus is left for a possible future pregnancy.

If terine myoma or fibromyoma undergoes degeneration during the puerperium, as evidenced by pain, fever, continuous lochia, either bright or foul and sometimes by evidences of peritonitis, an exploratory operation should not be long delayed. It may be possible to enucleate the tumor through the vagina if it presents in the lower uterine segment. If it shows evidences of spontaneous expulsion, this process may be hastened by the administration of ergot at regular intervals.

Myomectomy may be undertaken after the birth of one or more children without fear of rupture of the scar in subsequent pregnancy provided the scar does not become infected. The induction of abortion during the early months of pregnancy should not be regarded with fear as infection or trauma may damage the tumor tissue to such a degree that coalescence may be markedly protected and disturbed. If complications do not develop it may be better to wait viability of the fetus and then do cesarean section with or without hysterectomy. In some cases, however, total ablation of the tumor in the early months may be necessary.

EDWARD L. COMWELL, M.D.

McDonald E. The Processes of Tubal Pregnancy. *Am J Obst & Gynec* 9 3 1931, 7

The following classification of the processes in tubal pregnancy is suggested: (1) intramural extravasation, (2) fimbrial rupture, tubal abortion, and (3) transperitoneal rupture, tubal rupture. It is hoped that this new terminology will provide more descriptive of the pathologic processes. Fimbrial rupture may occur through the ostium or through a break in the tissues at the ostium and outside of the mucosal orifice.

In transperitoneal rupture of the tube the period of intramural extravasation is slight or absent. Cases in which it is slight are no doubt cases of profuse intraperitoneal hemorrhage without preliminary symptoms.

In a study of 1,095 case reports it was found that when the mortality of tubal rupture and tubal abortion was given separately the mortality of rupture was 17 per cent. and that of tubal abortion was 1.6 per cent. In 6,626 cases in series the total mortality after operation upon all forms of tubal pregnancy was 7.04 per cent. In 2,609 case reports in which the location of the tube given it was said to be the outer third or ampullar end of the tube in 75 per cent, the middle third in 15 per cent, and the uterine end in 10 per cent. This includes only deaths after operation.

The usual course of tubal pregnancy is intramural embedding of the ovum with dissection of the muscular coats of the tube and destruction of the tissue by the invading trophoblast. The first common accident which precedes the first symptoms of tubal pregnancy is intramural extravasation of blood. In the third of the cases fimbrial rupture then follows, and in one third transperitoneal rupture. In unilateral rupture often occurs through the dissection of the muscular coats at their junction with the mucosa of the fimbria, the hemorrhage discharging at the end of the tube through the fimbria. In the other cases the tube hemic is destroyed by the invading trophoblast, the mucosa and its boundaries being penetrated and the hemorrhage passing through the mucosal orifice at the os uterum. A tubal hematoma frequently forms outside the tube hemic and within the muscular coats of the tube but in some cases the ovum may be destroyed by the invading trophoblast and become incorporated in the hematoma. Intramural extravasation usually causes the death of the fetus. Transperitoneal rupture may occur as first accident without preceding intramural extravasation, and cases of sudden symptoms and severe hemorrhage may be followed by rupture of the ovum.

Intramural extravasation is the cause of the first pain in tubal pregnancy—the milder, sticky pains which precede the severe pain caused by the passage of blood into the peritoneal cavity.

With the destruction of the tube is often retracted or engorged, the fimbriae being on account of the traction of the mucosa and the outer coat. This explains why the anatomical relations of tubal rupture are often not recognized. FOWLER L. COLEMAN, M.D.

LABOR AND ITS COMPLICATIONS

Ottenberg, R. *The Etiology of Eclampsia*. *J Am Med Ass* 9:3 1934, 293

The author cites the recent contribution of McQuarrie, the findings of Dienst and his own earlier observations in support of the assumption that there is some connection between the toxemia of

pregnancy and blood incompatibilities between the mother and child. Directly the etiological factor is the accidental transfusion of incompatible blood between mother and child as the result of a fortuitous opening in the placenta between the two circulations.

In his series of 50 women McQuarrie found that toxemia occurred sixteen and one-half times more frequently when maternal and fetal blood were incompatible than when they were in the same blood group. Over 50 per cent of the cases of toxemia occurred in the group characterized by a teragglutination between the fetal and maternal blood.

In 160 cases Dienst injected methylene blue with erythritol preservatives into the umbilical artery or one of the still attached placenta immediately after delivery. In thirty-two of the cases (20 per cent) considerable amount of the methylene blue appeared in the urine which Dienst interpreted as indicating communication between the fetal and maternal circulations. Examination of the blood of 118 of these women showed that in twenty-four it agglutinated or laked the blood of the child. In fifteen of these cases there was no toxemia and no methylene blue in the urine (perfect placental barrier). In nine of the twenty-four the urine showed the dye. In seven of the nine eclampsia was present and in two there was albuminuria.

The same process might occur also in the child if maternal blood entered the fetal circulation. Of the children of eclamptic mothers 50 per cent died and the lesions present are essentially the same as those in the mother—general thrombosis.

The above presents experimental and clinical evidence to explain the production of multiple (generalized) hyaline thrombi in the liver and kidneys.

In conclusion, Ottenberg states that in the presence of warning signs of toxemia, direct examination of the mother's blood might reveal microscopic clumps of agglutinated red cells or phagocytosis of red cells, and that possibly several unexplained diseases of the newborn, especially jaundice and certain hemorrhagic diseases, are due to accidental placental transfusion of incompatible blood.

C. FARR JONES, M.D.

Anspach, B. M., Gillespie, W., Macdon, W. D., Brown, W. A., and Others. *The Treatment of Eclampsia*. A Symposium. *Therap* 6:1 9:1. 1934, 457.

In reply to questionnaire sent out by the editors of the *Therapeutic Gazette*, Anspach stated that in prepartum eclampsia removal should be obtained before an attempt is made to empty the uterus. The skin should be stimulated by means of hot spots, bath or hot pack and fluids forced subcutaneously, usually by enteroclysis, or by gastric lavage. The patient can not be made to allow. The use of drugs to promote diuresis is contra-indicated.

The bowels should be kept open by repeated purging with saturated solution of epsom salts or

if necessary croton oil or elaterium in the back of the tongue. If purgation is unsuccessful, high glycerine and salts enema followed by repeated colonic frictions is indicated.

The activity of the kidneys should be stimulated by giving water. If the water is taken by mouth, large doses of sodium citrate should be administered. Anspach advised against the administration of salt solution. He prefers plain sterile water or, if acidosis is present, a 1 per cent soda solution given intravenously or by enteroclysis. If the blood pressure and pulse are low, digitalis or sparteine may be of value. If the blood pressure is high, caffeine may be given with good results. If the blood pressure is above 180 and the pulse pressure proportionate, venesection is indicated. The amount of blood to be removed depends upon the effect on the blood pressure as well as the pulse pressure. Veratrum viride is of value in regulating the pulse.

The convulsions should be controlled by morphine given hypodermically and chloral and bromides given by the bowel. For anesthesia, gas and oxygen are best.

In regard to the delivery of the patient Anspach stated that if it becomes evident that the efforts at elimination will not be sufficiently successful, warrant further delay delivery must be effected in the manner which will be most rapid in the individual case and at the same time least dangerous. When, in a primipara, the head is in the pelvis and the cervix is soft and offers no barrier to rapid dilatation, labor may be induced by dilatation with the Voorhes bag and terminated by forceps. Caesarean section is indicated as soon as the dilatation is complete. When the cervix is long and rigid, and delivery through the natural channel promises to be difficult, abdominal caesarean section should be undertaken.

In cases of eclampsia arising during labor elimination should be increased and completion of the labor hastened by any safe procedure.

In postpartum eclampsia measures to increase elimination should be adopted. This is the more dangerous type.

Accouchement forcé is more dangerous and more difficult for both the mother and the child than caesarean section.

The most valuable drug is morphine.

GRUBBS advised much more liberal use of veratrum viride or veratrine. If there is immediate danger of a convulsion he pushes the intramuscular administration of the drug in 5 to 30 minim doses until sighing respiration and copious labored vomiting occur and there is a soft compressible pulse. It rarely induces labor, relying on elimination induced by the use of castor oil and fluids. Eclampsia during labor he treats in the same way except that he uses chloroform and completes the delivery after the first stage by means of forceps. Postpartum eclampsia is also treated by veratrum. He does not believe accouchement forcé or the routine administration of chloroform but sometimes uses this drug in the second stage. As he is of the opinion that mor-

phine prevents elimination, he uses veratrum viride instead.

MACOY's treatment and opium colicoides with that of Anspach.

BLAND outlined the same treatment as that of Anspach and Alacon, except for the use of chloroform for convulsions and veratrum viride for high blood pressure.

ALTMAN advised the limiting of morphine to a single dose of $\frac{1}{2}$ gr and the lowering of the blood pressure with veratrum viride. He uses either no anesthetic or nitrous oxide oxygen and ether.

R. S. CAHOY M.D.

Dunn, R. H. The Report of a Case of Rupture of the Uterus. *Trans. to M. M. N. B.* 9, 3, 1, 55.

In the case reported spontaneous rupture of the uterus occurred during the last month of second pregnancy. The patient's first labor was terminated by caesarean section after an attempt at forceps operation. The puerperium following the section was uneventful.

The first symptom of rupture occurred about three weeks previous to delivery by laparotomy apparently the extrusion of the fetus was very slow. At the time of operation the findings indicated that the rupture had taken place through the anterior uterine wall at the site of the old caesarean scar. It is interesting to note that the placenta was attached at that area and also along the anterior abdominal wall. The fetus, which weighed 8 lbs, was dead and macerated. Supravaginal hysterectomy was followed by slow but complete recovery.

R. S. CAHOY M.D.

PUERPERIUM AND ITS COMPLICATIONS

Veron, Michon, and Sedallien. Vaccinothérapie In Puerperal Infection (Contribution à l'étude de la vaccinothérapie de l'infection puerpérale). *Lyon chir.* 9, 3, 11, 7.

The authors have tested vaccine therapy in puerperal infection for a period of two years in the Charité Hospital, Paris. The first tests were made with stock vaccines, but more recently autogenous vaccines have been used.

The experience of these two years has led to the conclusion that vaccine therapy requires further testing by the employment of larger and more prolonged doses and different routes of introducing the vaccine such as the cutaneous and intracervical.

Stock vaccines and autogenous vaccines give different results. The stock vaccine is particularly applicable to the acute phase of the infection. It acts by producing general reaction, and in certain cases has an influence on the thermal curve. In some cases it does not bring about recovery, and when other treatments fail it also fails. Its favorable effects are limited to cases of slight or medium severity. Iodoform disinfection of the connective tissues of the broad ligament reduces the pain. It is not without a certain gratuity however.

In transperitoneal rupture, tubal rupture, the period of intramural extravasation is slight or absent. Cases in which it is slight are no doubt cases of profuse intraperitoneal hemorrhage without preliminary symptoms.

In a study of 1,093 case reports it was found that when the mortality of tubal rupture and tubal abortion was given separately the mortality of rupture was 17 per cent and that of tubal abortion was 1.6 per cent. In 6,626 cases in series the total mortality after operation upon all forms of tubal pregnancy was 7.04 per cent. In 909 case reports in which the location in the tube was given, it was said to be the outer third or ampullar end of the tube in 75 per cent, the middle third in 15 per cent, and the uterine end in few. This includes only deaths after operation.

The usual course of tubal pregnancy is intra-muscular embedding of the ovum with dissection of the muscular coats of the tube and destruction of the tissue by the invading trophoblast. The first common accident, which precedes the first symptoms of tubal pregnancy is intramural extravasation of blood. In one third of the cases, fimbrial rupture then follows, and in one third transperitoneal rupture. Fimbrial rupture often occurs through the dissection of the muscular coats to their junction with the mucosa at the fimbria, the hemorrhage discharging at the end of the tube through break in the tissue. In other cases the tube lumen is destroyed by the invading trophoblast, the mucosa and its boundaries being penetrated and the hemorrhage passing through the mucosal orifice to the exterior. A tubal hematoma frequently forms outside the tube lumen and within the muscular coats of the tube, but in some cases the canal may be destroyed by the invading trophoblast and become incorporated into hematoma. Intramural extravasation usually causes the death of the fetus. Transperitoneal rupture may occur as first accident without preceding intramural extravasation, and cases of sudden symptoms and severe hemorrhage may be followed by rupture very soon.

Intramural extravasation is the cause of the first pain in tubal pregnancy—the milder colicky pains which precede the severe pain caused by the passage of blood into the peritoneal cavity.

With the destruction which occurs in tubal pregnancy the fimbria of the tube is often retracted or engulfed, thus the tube on account of the stretching of the mucosa and the inner coat. This explains why the anatomical relations of tubal rupture are often not recognized. EDWARD L. CORWELL, M.D.

LABOR AND ITS COMPLICATIONS

Ottenberg, R. The Etiology of Eclampsia. *J Am Med Ass* 9:3 1933 995

The author cites the recent contribution of McQuarrie the findings of Diener, and his own earlier observations in support of the assumption that there is some connection between the toxemia of

pregnancy and blood incompatibilities between the mother and child. Briefly the etiological factor is the accidental transfusion of incompatible blood between mother and child as the result of a foramen opening in the placenta between the two circulations.

In his series of 50 women McQuarrie found that toxemia occurred sixteen and one half times more frequently when maternal and fetal blood were incompatible than when they were in the same or agglutination group. Over 70 per cent of the cases of toxemia occurred in the group characterized by interagglutination between the fetal and maternal blood.

In 100 cases Diener injected methylene blue with very slight pressure into the umbilical artery or vein of the still attached placenta immediately after delivery. In thirty-four of the cases (34 per cent) considerable amount of the methylene blue appeared in the urine which Diener interpreted as indicating a communication between the fetal and maternal circulations. Examination of the blood of 118 of these women showed that in twenty-four it agglutinated or laked the blood of the child. In fifteen of these cases there was no toxemia and no methylene blue in the urine (perfect placenta). In nine of the twenty-four the urine showed the dye. In seven of the nine eclampsia was present, and in two there was albuminuria.

The same process might occur also in the child if the maternal blood entered the fetal circulation. Of the children of eclamptic mothers 70 per cent die and the lesions present are essentially the same as those in the mother—general thromboses.

The author presents experimental and clinical evidence to explain the production of multiple (generalized) hyaline thrombi in the liver and kidneys.

In conclusion Ottenberg states that in the presence of warning signs of toxemia, a direct examination of the mother's blood might reveal microscopic clumps of agglutinated red cells or phagocytosis of red cells, and that possibly several unexplained diseases of the newborn especially jaundice and certain hemorrhagic diseases, are due to accidental placental transfusion of incompatible blood.

C. FREDERICK JONES, M.D.

Anasack, B. M. Gillespie, W., Mason, W. D., Bowen, W. S. and Others. The Treatment of Eclampsia—A Symposium. *Therap Gest* 9:1. 3 1934, 437.

In reply to questionnaire sent out by the editors of the *Therapeutic Gazette*, Anasack stated that as preparation eclampsia elimination should be obtained before an attempt is made to empty the uterus. The skin should be stimulated by means of hot vapor bath or hot pack and fluids forced subcutaneously intra-venously by enteroclysis, or by gavage, but the patient cannot be made to swallow. The use of drugs to promote diaphoresis is contra-indicated.

The bowels should be kept open by repeated purging with a saturated solution of epsom salts or

GENITO-URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Saloga: Demonstration of Patient in Whom One Suprarenal Gland Was Extirpated Because of Suprarenal Arterial Gangrene (Demonstration eines Patienten, dem wegen Gangraena arteriologica suprarenalis die Nebenniere extirpiert wurde). *Verhandl. d. Gesellschaft f. Chir. Moskau* 9.

The left suprarenal gland was extirpated according to the method of Oppel because of the signs of beginning gangrene of the four extremities. The specimen showed hypertrophy of all the layers. Immediately after the operation, the pulsation in the blood vessels, which previously had been entirely absent, reappeared. The pain then ceased and the gangrenous ulcers healed. A month later, however, excruciating pain began again and the pulsations became weaker.

In the discussion, in which Fedoroff, Spasharny, Roussoff and Rens took part, it was emphasized that the theory of hyperadrenism of the blood following hypertrophy of the suprarenal substance upon which Oppel's operation is based, has not been proved. In some cases the suprarenal gland is atrophic. The author replied that he did not entirely agree with Oppel, but believed that in severe cases, in which nothing else will help, this operation is justified. *BLUMENFELD (2)*

Bench, P. B. Salivary Urea and the Mercury Combining Power of Saliva: A New and Simple Index of Renal Insufficiency. *Med. Cl. N. Am.* 93, 4, 3.

There is increasing recognition of the fact that the determination of blood urea gives practically all the information of clinical value desired that might be obtained from estimations of total nitrogen, on protein nitrogen, ureic acid and creatinin. The estimation of the blood urea by the urease method of Marshall as modified by Van Slyk, although comparatively simple procedure if certain laboratory facilities are available, is rather complicated and laborious for the use of the general practitioner.

It is known that urea is easily diffusible and therefore is distributed approximately equally in all the tissues of the body. Saliva was found to be a very available and useful indicator of urea retention and in a previous communication Aklirsch and Hirsch pointed out the intimate association between the concentration of urea nitrogen in the blood and the concentration of the combined urea and ammonia nitrogen in the saliva. They found that nearly all of the ammonia in the saliva comes from urea in the process of its breaking down by oral bacteria in the presence of the buccal saliva. Therefore the ammonia should be considered part of the urea, and the

combined amount of ammonia nitrogen and urea nitrogen should be considered as comparable with the blood urea nitrogen.

In the saliva of normal persons, from 6 to 13 mgm of combined urea and ammonia nitrogen for each 100 ccm were found. This represents between 13 and 7 mgm of urea for each 100 ccm. Further observations have caused the author to consider from 6 to 6 mgm of combined urea and ammonia nitrogen as the average amount for persons without urea retention, and this combined urea and ammonia nitrogen of the saliva closely approximates that of the urea nitrogen of the blood.

In cases of urea retention, the combined urea and ammonia nitrogen in the saliva also increases with an increase in the blood urea nitrogen.

The advantage of estimations of the salivary urea by the urease method is chiefly the availability of saliva. Blood is not always obtainable, especially in the cases of children and obese persons in whom venipuncture is difficult. The value of salivary urea determinations has become still greater with the finding of a more rapid and more simple method than the urease method. This consists of the estimation of the mercury combining power of saliva.

In series of approximately 1,000 determinations on the saliva obtained from approximately 500 persons whose blood urea content varied from 1 to 55 mgm for each 100 ccm, it was noted that the mercury combining power of saliva increased with an increase in the blood urea and salivary urea as determined by the urease method. Therefore the mercury combining power of saliva may be used as an index of blood urea concentration.

With two easily obtainable reagents the estimation of the mercury combining power of saliva may be completed in five minutes. Thus a simple practical method is available whereby an index of the blood urea can be obtained by any practitioner since it necessitates only the most simple apparatus.

Bichloride of mercury in excess in the presence of saturated sodium carbonate gives reddish brown precipitate, mercuric oxychloride. Not until there is bichloride of mercury in excess is this precipitate obtained. A deepening canary yellow color is noted before the first brownish red tinge appears. The saliva has definite power of combining with varying amounts of bichloride of mercury. The combination is between bichloride and certain nitrogenous salivary constituents, mainly urea. As urea represents by far the greater percentage of the combining nitrogenous substances, and as its avidity for bichloride is much greater than that of the other nitrogenous salivary constituents, the mercury combining power of saliva is an index of the quantitative presence of urea, and the variations in this combining power

depend almost entirely on the blood-urea concentration. Findings from experiments with standard solutions of urea, uric acid, etc. are in accord with the data obtained from the saliva in series of normal persons and persons with urea retention.

The mouth is first washed out with half glass of water and a small piece of paraffin may be used to stimulate salivary flow. Ten specimens of about 8 cm each are collected. This collection may be made in a very few minutes, and generally without any inconvenience to the patient. The first or preliminary specimen, which removes food particles or excess of epithelial debris is discarded or used as a check on the second specimen which is used for titration. The first and second specimens may show a slight difference in the combining power (usually very slight increase in the first specimen, 1 to 3 cm for each 5 cm saliva).

Five cubic centimeters of saliva are measured into flask by means of a graduated pipette and then titrated with a 5 per cent solution of mercuric chloride. For the latter as rule, a graduated 0.5 cm pipette is sufficient. The addition of bichloride of mercury is continued until one drop of the mixture added to a drop of saturated sodium carbonate on a porcelain plate causes the prompt appearance of a definite reddish-brown tinge. Unless the brown color develops within about three seconds, this should not be considered the end point and drop or two more of the bichloride should be added. The result may be expressed in terms of the number of cubic centimeters of bichloride of mercury used to obtain this end point. For the sake of comparative uniformity however the results are reported in terms of cubic centimeters of bichloride of mercury for each 100 cm of saliva. This value is called the salivary urea index.

It is unnecessary to filter the specimens because the epithelial debris has certain small mercury combining power which practically compensates for the slight quantitative error in the bulk obtained by its presence. Unfiltered, filtered, and supernatant specimens of the same saliva give practically the same result.

For 100 cm of saliva the combining power in normal persons is between 30 and 50 (that is 30 to 50 cm of 5 per cent solution of bichloride of mercury). For 5 cm of saliva it is between 5 and 5.5 (that is 5 to 5.5 cm of 5 per cent solution of bichloride of mercury). The upper limit of this range is generally obtained in the presence of the upper limit of normal blood urea concentration which was taken as 40 mgm for each 100 cm of blood. When retention occurs, the mercury combining power rises quantitatively and at blood urea concentration of about 5.5 mgm for each 100 cm the mercury combining power is about 70 for each 100 cm of saliva or 3.5 for each 5 cm of saliva.

Cases in hospitals may be followed daily with occasional checks on the blood-urea. The method may be used routinely before blood urea estimations are made, the inconvenience of unnecessary ven-

punctures being thus avoided. When blood urea estimations are impossible, it may be employed as an adjunct to urinalysis and the phenolsulphone phthalein test, since the specimens may be collected at the bedside and analyzed in the physician's office. It may be used also as an office test to detect cases of retention. P. S. HENCK, M.D.

Joseph, E. Difficulties in Estimating Surgical Inadequacy of the Kidney (*Schwierigkeiten in der Beurteilung chirurgischer Nierenkrankheiten*). *Versammlung d. deutsch. Gesellschaft f. Chir.* 1913.

As a rule surgical kidney disease is unilateral. In bilateral disease it may be difficult to determine which kidney is most severely affected and whether the patient will be able to withstand operation. Cryoscopic examination shows that the kidney parenchyma is greatly reduced and must not be further reduced by operation. Cases are known, however, in which the kidney was successfully removed in spite of an unimpaired cryoscopic examination of the blood. In other cases fatal uremia followed shortly after thyrochloride narcosis or X-raying of the carcinomatous bladder.

In bilateral cases Joseph pays less attention to the results of functional tests than to the anatomical findings of bilateral pyelography. The latter he regards as of great importance in cases of bilateral renal calculus, pyonephrosis on one side and severe pyonephritis on the other, and advanced tuberculosis of one side and beginning infection on the other. The pyelogram will show the extent of the destruction. It will not reveal the amyloid on the other side, but this is demonstrated by the high albumin content of the ureteral urine.

In the cases of old persons a good functional test does not at all exclude the possibility of post-operative uremia. This is especially true in cases requiring prostatectomy. If prostatectomy is undertaken at all in the presence of high blood pressure and advanced arteriosclerosis, it should be done in two stages. STARRIS (2).

Mascherbauer, O. Free Grafting of Omentum in Case of Pericarditis. Nephrectomy for Morbid Kidney. Repeated Cases of America Curd by Ureteral Catheterization (*Gründ. epikritische Fälle einer neuen Methode der pericardialen Nephrectomie pour reins morbes, cures d'anurie répétées guéries par le cathétérisme urétral*). *Bull. et mémoires Soc. de chir. de Par.* 1913.

The case reported is of interest to the surgeon because the result of free transplantation of omentum as observed in second operation performed four years later. It is of interest to the urologist because series of attacks of anuria are cured by ureteral catheterization.

In the anamnesis severe typhoid fever and tuberculosis of the lungs were mentioned. At the first laparotomy performed in 1908 because of the symptoms of subacute peritonitis, the ascending and transverse colon were found bound closely together

by strong adhesions due to pericystitis at their junction. By sharp separation, a large surface of the bowel was denuded. Free grafting of omentum was then done. The operation was followed by several painful crises of anemia. These were cured temporarily by ureteral catheterization. In 1918 the movable and sclerotic right kidney was removed. At another operation performed in 1911 because of painful intestinal crises and melena alternating with obstinate constipation, the ascending and transverse colon were found entirely normal; the grafted omentum having been apparently replaced by smooth serosa. As in the upper part of the sigmoid an external stenosis was found, although no ostomy was done. Recovery followed.

Six months later several renal crises accompanied by symptoms of uremia necessitated renewed ureteral catheterization. The last catheterization was followed by the spontaneous expulsion of three phosphatic stones which repeated X-ray examinations had failed to reveal. R. DODGE MARK, M.D.

Israel, A. Studies of the Contractility of the Renal Pelvis and the Ureter (Versuche ueber die Contractilitaet des Nierenbeckens und des Harnleiters) *Ztschr f. urol. Chir.* 9:3, 1918, 38.

The author experimented to determine whether contractions of the smooth muscle of the ureter and kidney pelvis could be demonstrated with the myograph. He made a lever from a 5 cm straw, placed the fulcrum about 2 cm from the muscle and formed an axis by pushing through the straw at right angle, needle pointed at both ends. The other paraphernalia used were those usually employed in myographic determinations.

In cats and dogs in narcosis the kidney, as exposed and the ureter and renal pelvis were freed by dissection. The ureter portions of the pelvis which were freed of mucous membrane and the calices were then individually excised, stretched, and irrigated with physiological salt solution. On electrical stimulation the excised kidney pelvis showed contractions which were plainly demonstrable myographically. With equal stimulation, however, these did not attain the magnitude of the ureteral contractions. In the isolated calices contractions could not be demonstrated. GERRITZ (Z).

Bloch, A. Chronic Pyelitis or Infected Hydro-nephrosis? (Chronische Pyelitis oder infunct. Hydronephrose) *Ztschr f. urol. Chir.* 9:3, 1918, 9.

On the basis of eight cases the author concludes that simple pyelitis treatment is without effect in many cases of chronic or recurrent cases of pyelitis and their sequelae because the primary factor is a mechanical or dynamic obstruction. Such obstruction results from former pyelitis or per ureteritis causing adhesions between the pelvis and the ureter. The treatment should be ureterolysis. Similar adhesions may be formed in acute appendicitis when the inflammation through the lymphatics attacks the right kidney pelvis and ureteral neck. In other

cases the obstruction to the outflow of urine may be congenital being due to vessel anomalies, congenital enlargement or insufficiency of the ureter or congenital insufficiency of the bladder musculature. Hydro-nephrosis due to such causes is detected only after infection. In unilateral cases the treatment is extirpation, but in bilateral cases only a conservative operation can be considered.

This article is supplemented with a bibliography. PRILANDER (Z).

Eisendrath, D. N. Tumors of the Kidney. *Surg. Clin. N. Am.* 9:3, 1918, 607.

This article contains a case report, a discussion concerning the best method of approach in operations for renal tumors, and an outline and discussion of the pathological types of tumor found in the kidney and kidney pelvis. The causes of hematuria are shown in drawing.

The author emphasizes the importance of pyelography before diagnosis of renal tumor is made.

A hypernephroma may grow into a large vein, Eisendrath prefers to tie the renal vein early in the operation to prevent the entrance of bits of tumor into the venous cavity. He recommends that the ordinary lumbar incision be extended forward so that the operator may attack the renal vein by pulling the colon and peritoneum forward toward the midline of the body before removing the kidney.

The article contains many pyelograms, drawings, and photographs. GILBERT J. THOMAS, M.D.

Hood, A. J., and Albert, H. An Unusual Malignant "Mixed" Tumor (Adenosarcoma) of the Kidney in a Young Child. *California State J. Med.* 9:3, 1918, 28.

The authors report this case of malignant kidney tumor in an infant not only because of the rarity of the case and the paucity of the literature on this subject but also because the child came under observation before any signs or symptoms of the tumor had developed and hence the rapidity and course of the growth could be observed.

When the right peritoneal cavity was opened through a right rectus incision, the mass was clearly exposed below. Several small metastases were seen in adjacent loops of intestine. A loop of the ileum incorporated in the mass was resected. The mass was easily freed down to the kidney pedicle which was clamped, and the tumor and kidney were removed en masse. Great care was used to control hemorrhage. The child's condition was too poor to permit proper attention to the raw peritoneal edges. Death occurred on the third day following the operation. There was no autopsy.

The article is summarized as follows:

Malignant tumors of the kidney or kidney region are of rather rare occurrence in children.

1. Many of the kidney tumors of childhood are of the mixed type.

2. Mixed malignant tumors of the kidney always contain sarcomatous element.

4. Certain mixed tumors contain bular gland in addition to sarcomatous elements, and hence represent desmosarcomata.

5. Adenocarcinoma of the kidney or kidneys region originate from rests of mesothelial tissue of the type originally designed to form the typical kidney structure.

6. Adenocarcinoma and other mixed tumors of the kidney which occur early in life are rapid in growth, cause little pain, and usually terminate fatally. Metastases occur in way of the blood stream.

7. The operative mortality is high. Death frequently occurs soon after the operation. Children who survive the operation usually succumb to recurrence of the tumor.

8. An early diagnosis and prompt operative removal are the only means of prolonging life.

LOUIS (J. M. M. D.)

Sterner, W. F. The Diagnosis and Surgical Treatment of Malignant Tumors of the Kidney. *J. Urol.* 1913.

As primary recovery from malignant tumor of the kidney depends on early diagnosis and the time of the presence of even one of the classical symptoms, namely, hematuria, pain, and palpable tumor, should be regarded as an indication for careful and complete examination of the genito-urinary tract. The most important sign of all is renal pelvic deformity, revealed by pyelography. The other three symptoms mentioned may be found in various renal conditions and in extrarenal conditions. Of 413 cases, only 44 per cent were found to have hematuria, pain, and a palpable tumor at the same time, but pelvic deformity, as revealed nearly every last one. Other aids in the diagnosis are X-ray examination of the gastro-intestinal tract, the presence of neoplastic cells in the urine, and profuse bleeding sometimes following ureteral catheterization.

In the absence of definite metastasis and the presence of severe pain or hemorrhage and intestinal obstruction the treatment consists of nephrectomy. Radium pack and deep X-ray therapy are of little value.

HOWARD W. PLACENTYER, M.D.

Fränkel, R. Complications of Nephrectomy (Komplikationen bei der Nephrektomie). *Allg. chirurg. Med.* 1913.

In addition to describing each complication in detail, the author discusses the measures for combating it. Injury to the peritoneum is frequent complication. Injury to loop of intestine leads to fecal fistula; therefore in this complication the involved loop of intestine should be resected.

Intestinal bleeding following nephrectomy is caused by thrombosis of the veins of the small intestine and is to be combated by the internal administration of ergotin, stypticin, or calcium chlorate. Injuries to the diaphragm are rare. Injuries to the pleura are more common and usually lead to death. In one case of injury to the pleura the author obtained favorable outcome by immediate suturing the

injured portion. To prevent secondary hemorrhage from the stump of the renal pedicle he recommends the isolation of the ureter from the blood vessels and the separation of the ligatures. The ligation of an artery clamps the organ and controls such hemorrhage is not sufficiently dependable for general application and should be done in exceptional instances only.

Severe hemorrhage may result from the injury of accessory renal vessels at operation. In order to avoid this complication every more or less important blood vessel entering the kidney should be severed and ligated double ligature. Injuries to the ureter and the renal pelvis have also been reported. According to the literature these injuries are not always fatally treated. Ligature of the site of injury and especially double ligature of the ureter is the method which gave the best result. The stump of the ureter should also be ligated with a double ligature.

In some cases, secondary operation is necessary to deal with retrograde flow of urine. The function of the remaining kidney must be most carefully investigated in order to prevent postoperative uremia. Antiseptics (chloroform or cocaine) are used in nephrectomy. To combat beginning anuria decapsulation according to the method of Fiedel should be performed. After the following nephrectomy the author describes the physiological compensatory hyperemia. *Blutkreislauf* 1913.

Kehl, A. Animal Experimentation on Anastomosing the Ureters to the Gall-Bladder in Extractions of the Bladder (Tierexperimente über die Anastomose des Harnleiters mit der Gallenblase). *Beitr. Klin. Chir.* 1913.

In order to save the patient both the discomfort and the danger of implanting the ureters into the skin, the superficial layer of the skin, or the intestine, for the anastomosis of the bladder, Kehl used the following simple method: After making an incision on the side of the bladder, he demonstrated the technical possibility of the procedure and after the injection of preparations had shown that the necessary isolation of the ureters had produced no circulatory disturbances, the operation was performed upon dogs. After temporary period of being ill of the experimental animals proved very soon and died in from five to seven days.

Autopsies showed the most perfect results, no edema and no injury of the brain. Microscopic examination showed that spasm of the renal vessels had led to the drying up of the urinary secretion. The small intestine presented distinct congestion of the mucosa. Usually the occurrence of nitrogen retention left no doubt as to the development of uremic coma.

Because of these results Kehl could have discontinued his investigations, were it not for the fact that his studies were under the direction of Dr. Quervain, who undertook similar experiments. Dr. Kehl himself died of the disease.

to be chronic enteritis and thus he hoped to prevent in the future by the adoption of special measures. Dardel came to the conclusion that the implantation of the ureters into the gall bladder can be carried out in man particularly in cases of ectopia of the bladder. Kehl contradicts this conclusion on the basis of the results of his own investigations. According to Kehl's experience, the contents of the gall bladder do not always remain sterile and the enteritis is symptom of fatal uremia caused by the continued absorption of urino from the intestine. J. VARY (Z)

Harnagel, E. J. A Simple Treatment of Certain Lesions of the Intravesical Ureter in the Female. *J. Urol.* 9:3 35

The considerable mobility of the terminal portion of the ureter which has long been noted by surgeons operating upon the urinary bladder and has often rendered ureteral catheterization difficult can be turned to distinct advantage in the female. The lesion of the intravesical ureter such as uretero-ventral cyst or a calculus of this portion. The cyst or calculus may be grasped by Young's cystoscopic forceps and drawn down by a wire tract for its destruction or removal to the external urinary meatus. When released, the ureter will drop back into the bladder to its normal position. The principal advantages of this operation are that it is simple and is followed by almost immediate recovery. HENRY W. PLACONETTER, M.D.

BLADDER, URETHRA, AND PENIS

Maan, F. C. and Magou, J. A. H. Absorption from the Urinary Bladder. *Am. J. Urol.* 1:1 66

A series of experiments performed to discover whether bacteria would pass through the various components of the urinary tract dyestuff is added to the injection medium to serve as control. The authors' experiments were carried out under ether anesthesia and the urethra and ureters were eliminated as sources of absorption. Nineteen experiments were performed. In sixteen cases the dyestuff injected into the bladder was detected in the urine draining from the severed catheter. The time elapsed before the appearance of the dyestuff varied from eight minutes to more than one hour. In most instances it was between fifteen and thirty minutes after the injection into the bladder.

These experiments showed that absorption may take place from the bladder even when the mucosa is normal. The total amount absorbed was relatively small. A. J. SCHMIDT, M.D.

Ficks, R. E. The Value of Diagnostic X-Ray in Neoplasms of the Urinary Bladder. *The J. Gen. 9:3 3 XXXX 549*

In every case with symptoms or signs suggesting a neoplasm of the bladder an examination of the pelvis should be made. A roentgenogram of

case of bladder tumor included in the article shows the tumor very plainly and also an area of bismuth in suspension and an area of urine and air. The author cites a case in which the tumor could not be found with the cystoscope until it had been demonstrated by the X-ray. Therefore X-ray plates made with bismuth emulsion; the bladder may be valuable aids in cystoscopic examination.

BENJAMIN F. ROLLER, M.D.

Bugbee, H. L. G. Report of Cases of Malignant Growths of the Bladder Treated by Resection and Radium. *J. Urol.* 9:3 2, 30

The author reports sixteen cases of malignant disease of the bladder and discusses the various forms of treatment including fulguration, diathermy and radium.

A point in the diagnosis the effect of fulguration on the papilloma is often of great value. If papilloma does not respond to fulguration it is probably malignant and the bladder should be opened without delay. When there is doubt in the author's cases as to the nature of the growth removed or of sections taken for diagnosis, the same sections and sections from different parts of the growth were submitted to more than one pathologist. In several instances one pathologist reported no malignancy while another reported carcinoma. According to the author this means either different classification of bladder tumors by the pathologist or malignancy in isolated areas of the tumor. Bugbee draws the following conclusions:

1. Cases of extensive carcinoma of the bladder which metastasize have taken place, effort should be directed toward making the patient as comfortable as possible. Often this may be done best by simple bladder drainage.

2. In tenacious carcinoma of the bladder without metastasis, it is possible in some cases to destroy the growth by repeated insertions of radium needles at intervals, free drainage for flushing and infection and measures to increase elimination.

3. A circumscribed carcinoma should be removed by resection if possible. Recurrences after operation are less resistant than the primary growth. Some times yielding even to fulguration. All cases should be kept under observation following operation in order that recurrences may be detected early.

4. The insertion of radium needles into the bladder without the line of resection causes the formation of ulcers. In some cases these remain for four months. This treatment minimizes the chances of local recurrence by destroying stray cancer cells and involves no risk or discomfort.

5. Malignant papilloma should be removed by resection and the line of resection fortified by the insertion of radium needles.

6. While the cases reported are too recent to warrant definite conclusions, the course of the condition has been decidedly more satisfactory than in cases treated by methods formerly employed.

HENRY W. PLACONETTER, M.D.

Brack, E. The Genesis and Present Day Treatment of Stricture of the Urethra (Zur Genese und zur heutigen Therapie der Harnrohrenstriktur) *Arch f. pathol Anat.* 1913, cxxv, 37

The author made a histologic study of twenty-five cases of typical urethral stricture. In ten cases it was located in the membranous portion, and in these cases seemed to have a particular relationship to the excretory ducts of Cowper's glands. According to Brack, Cowper's glands are frequently involved by inflammation of the urethral mucosa. This is true more often in non-specific infections than in gonorrhea.

Pericapsular inflammatory infiltrations are formed in the region of the gland and under certain circumstances an abscess develops in the gland and the inflammation spreads to the corpus cavernosum, causing thrombus formation or even general sepsis. In many cases cicatricial stricture of the urethra is the cause of so-called "compensita." When treated, the stricture may give rise to characteristic fissures in the urethral wall. As a rule these are superficial but occasionally extend into the corpus cavernosum and lead to "transitory febrile infection" or severe septic condition. MEYER (Z).

Joseph, H. Plastic Operations on the Male Urethra (Zur Frage des Ersatzes von Defekten der Harnröhre beim Harnrohren) *Zentralblatt f. urol. Chir.* 1913, xii, 58

The methods of operating for epispadias and hypospadias may be classified into three groups: (1) those in which the deficiency is bridged by suturing of the torn edges; (2) those in which the deficiency is filled by stretching and moving the remaining parts of the urethra; (3) plastic methods in which a new tube is formed by means of skin flap or by free transplantation.

For extensive defects in the posterior urethra Bidde has suggested cutting the flap from the scrotum all around, but leaving it connected subcutaneously with the septum scroti which contains branches of the posterior scrotal artery from the perineal artery. This method was used by the author in a case of extensive injury and shortening of the anterior urethra in which the penis and scrotum were adherent by firm scars. After preparation the 6-cm. defect was bridged by a 5 by 7 cm. flap formed into a tube which hung from the septum scroti like an intestinal loop from its mesentery and was sutured into the urethra. The urine was drained through a suprapubic fistula. The new urethra functioned well and the result was permanent. Shrinkage did not occur. VON TAPPEINER (Z).

Forster, N. K. Epithelioma of the Penis Following Phagedenic Chancroidal Infection. *Urol. & Gynec. Rev.* 1913, xiv, 458

The author reports a case of carcinoma of the penis developing in the site of an unusually stubborn chancroid which had been under observation at intervals over a period of several months. At

macroscopic studies of sections from the ulcer taken when the patient was first seen and again in the fourth month showed no evidence of malignancy. In the eighth month, however, malignancy was clearly apparent and necessitated amputation of the penis and diversion of the urinary stream by perineal drainage. Eight months after the operation there was no evidence of recurrence.

The case is cited to show the importance of keeping in mind the possibility of malignant changes in phagedenic chancroids. HARRY L. SAVRON, M.D.

GENITAL ORGANS

Swan, R. H. J. The Incidence of Malignant Disease in the Apparently Benign Enlargement of the Prostate. *Proc. Roy. Soc. Med. Lond.* 1913, xvi, Sect. Urol. 7

In the cases reviewed, digital examination of the prostate gland revealed only a soft, elastic, movable enlargement and the symptoms are those presented by the ordinary benign hypertrophy. In three cases operation as followed by carcinomatous infiltration; the lateral lymphatic space. Thus, however did not interfere with micturition.

In Swan's opinion malignancy occurs in apparently benign hypertrophy of the prostate more frequently than is generally believed, and therefore every gland removed at operation should be subjected to a close macroscopic examination before a diagnosis of entirely benign enlargement is made. HENNA, L. KARMONIA, M.D.

Judd, E. S. On the Surgical Treatment of Diseases of the Prostate Gland. *Am. J. Surg.* 1913, xxvii, 300

Benign changes in the prostate are serious just so far as they interfere with the function of the kidneys. Inflammation arising in the prostate association with urethral infection usually subsides gradually as is other tissues in certain cases, however it goes on to suppuration and abscess formation, necessitating surgical relief. Prostatic inflammation usually occurs in young men or men of middle age at a time of life when the prostate is functionally active. In the cases of younger patients conservatism should be practiced. In men past middle age operation is usually advisable.

The trouble following benign enlargement of the prostate depends on the amount of interference with the function of the bladder and urethra. Benign enlargement develops in the gland like a new growth. The tissues are compressed by the growth and form a capsule from which the adenomatous hypertrophy can be readily enucleated. If prostatectomy is performed in the early stages of the enlargement there should be no mortality and only a low morbidity. Difficulty arises from the impairment of important functions as a result of long standing obstruction.

Cancer of the prostate in most cases arises in the posterior lobe; that portion of the prostate which is

generally not removed in a suprapubic prostatectomy. The best results are obtained when the prostatectomy is followed by radium treatment.

At the Mayo Clinic prostatectomy is performed in the same way as abdominal operations, every step being visualized. Exposed tissues can be packed off and hemorrhage can be controlled by a tourniquet.

Sacral nerve block gives the most satisfactory anesthesia for prostatectomy and practically never causes postoperative complications. It is simple and easily induced and gives an anesthesia of an intensity and duration sufficient not only for the removal of the prostate but also for resection of the bladder for other conditions if this should be necessary. It must be supplemented by suprapubic filtration. The injection of no cocaine into the region of the sacral nerves should be done slowly because slow absorption of the solution tends to minimize the possibility of transient toxic effects.

A. J. SCHOLL, M.D.

WALSH, H. P. W. The Closure of the Suprapubic Urinary Fistula Following Suprapubic Prostatectomy. Observations on Sixty-Eight Cases. *Bull. J. Surg.* 9, 3, 23, 3.

In the cases reviewed the bladder wound was closed around a Freyer tube and occasionally a small drain was inserted in the prevesical space. The tube was left in place for three or four days and then replaced by a smaller one. The urine drained into absorbent dressings held in place by many tailed bandage and changed every four hours. If prostatic pain was used it was removed on the third day. The bladder and the prostatic cavity were irrigated suprapubically and by Janet method daily. The suprapubic drain and the tubes were removed on the tenth day and a large steel sound was passed per urethram. In a complicated case the patient was sitting up out of bed during the third week. An indwelling catheter was used, when indicated and the patient discharged from the hospital when the fistula had closed.

In relation to the employment of an indwelling catheter the cases are divided into groups as follows:

Group. Cases in which the fistulae were closed by the twenty-eighth day without the use of an indwelling catheter.

Group. Cases showing signs of delay in the closure of fistulae: (a) treated with an indwelling catheter; (b) indwelling catheter contra-indicated for the time being and closure occurring later spontaneously or following delayed use of the catheter.

Group contained 38 per cent of the cases, closure occurred in an average of twenty days. About 4 per cent of the cases fell under Group 2a, an indwelling catheter being used for three days during the fourth week of convalescence. Of this group, 67 per cent had closure before the twenty-eighth day. Group 2b contained 30 per cent of the total number of cases. 16 per cent of these closure occurred

without the use of the indwelling catheter; the average time being thirty-seven days. In 38 per cent closure was delayed until a catheter could be borne with safety; the average time being thirty-four days.

The conditions preventing the use of the indwelling catheter were acute epididymitis, pyelonephritis and slough or phosphatic deposit on the wound surfaces. The epididymitis usually occurs in the first week of convalescence and therefore is not necessarily a contra-indication to the use of the catheter in the fourth week of convalescence. When the catheter is tried, the presence of a pyelonephritis increased rather than diminished the signs of infection. Phosphatic deposit on the wound surface occurred early and began to slough off about the end of the third week. Catheter use of no value until the granulations are free from slough, and these cases were prone to develop epididymitis and pyelonephritis.

The attempt was always made to obtain undelayed closure without the use of the indwelling catheter but often when failure persisted closure was established at once by the proper use of the catheter. The catheter also caused the re-establishment of micturition when this was delayed. The catheter is to be avoided, if possible because it is a foreign body in the granulating prostatic bed. The urethritis it sets up appears to be proportional to the time it remains in the rectum. As the discharge is serous until about the third day the catheter was removed at the end of the third day. The maximum benefits are to be obtained when the catheter is not used too soon in case of doubt as to the time it should be employed; delay of a day or two is desirable. If the fistula is in danger of becoming epithelialized it may be curetted and the edges approximated with adhesive tape.

Before final closure of the fistula is accomplished the indwelling catheter the wound surface should be free from slough and phosphatic deposit and micturition established. Under such circumstances the wound should remain dry for an hour or longer at a time. If spontaneous closure has not occurred after several days in this condition the catheter should be employed. In the cases reviewed the fistula most difficult to close occurred when the first of two stage prostatectomy had been done months before the secondary operation, and when the re-establishment of micturition did not occur until after the use of the indwelling catheter. Large catheters of gum elastic were used.

The operative procedures included the Freyer, the Thompson-Walker and the two-stage prostatectomy. The first two methods were used in 8 per cent of the cases and were followed by healing in twenty-six days. A two-stage prostatectomy was done in 19 per cent, and followed by healing in thirty days. The more slowly healing cases were by no means all in the last group. In two cases the first stage had been done eight months prior to the prostatectomy and closure required eight and nine weeks.

Brack, E. The Genesis and Present Day Treatment of Strictures of the Urethra (Zur Genese und zur heutigen Therapie der Harnrohrenstrikturen) *Arch f. Pathol Anat.* 1913, cxvii, 37

The author made a histologic study of twenty-five cases of typical urethral stricture. In twenty-four it was found in the membranous portion, and in these cases seemed to have particular relationship to the excretory ducts of Cowper's glands. According to Brack, Cowper's glands are frequently involved by inflammation of the urethral mucosa. This is true more often in non-specific infections than in gonorrhea.

Pericarcinular inflammatory infiltrations are formed in the region of the gland, and under certain circumstances an abscess develops in the gland and the inflammation spreads to the corpora cavernosa, causing thrombosis formation or even general sepsis. In many cases cicatricial structure of the urethra as the cause of so-called "compensitis." When treated, the stricture may give rise to characteristic fissures in the urethral wall. As a rule these are superficial, but occasionally extend into the corpora cavernosa and lead to transitory febrile infection or a severe septic condition. WATKIN (Z)

Joseph, H. Plastic Operation on the Male Urethra (Zur Frage der Erzielung von Defekten der Harnröhre) *Ztschr. f. urol. Chir.* 9, 3, 18, 58

The methods of operating for epispadias and hypospadias may be classified into three groups: (1) those in which the deficiency is bridged by suturing of the trimmed edges; (2) those in which the deficiency is filled by stretching and moving the remaining parts of the urethra; (3) plastic methods in which new tube is formed by means of skin flap or by free transplantation.

For extensive defects in the posterior urethra Bedde has suggested cutting the flap from the scrotum all round, but leaving it connected subcutaneously with the septum scroti which contains branches of the posterior scrotal artery from the perineal artery. This method was used by the author in case of extensive injury and shortening of the anterior urethra in which the penis and scrotum were liberated by firm scars. After preparation the 6-cm. defect was bridged by 5 by 7 cm. flap formed into a tube which hung from the septum scroti like an intestinal loop from its mesentery and was sutured into the urethra. The urine was drained through suprapubic fistula. The new urethra functioned well and the result was permanent. Shrinkage did not occur. VON TAPPEINER (Z)

Forster, N. K. Epithelioma of the Penis Following Phagedenic Chancroidal Infection. *Urol. & Gynec. Res.* 912, XLV, 458

The author reports a case of carcinoma of the penis developing in the site of an unusually stubborn chancroid which had been under observation at intervals over a period of several months. Microscopic studies of sections from the ulcer taken

when the patient was first seen and again in the fourth month showed no evidence of malignancy. In the eighth month, however, malignancy was clearly apparent and necessitated amputation of the penis and diversion of the urinary stream by perineal drainage. Eight months after the operation there was no evidence of recurrence.

The case is cited to show the importance of keeping in mind the possibility of malignant changes in phagedenic chancroids. HENRY L. SAVON, M.D.

GENITAL ORGANS

Swan, R. H. J. The Incidence of Malignant Disease in the Apparently Benign Enlargement of the Prostate. *Proc. Roy. Soc. Med. Lond.* 19, 3, 191, Sect. Urol. 7

In the cases reviewed, digital examination of the prostate gland revealed only soft, elastic, movable enlargement and the symptoms were those presented by the ordinary benign hypertrophy. In three cases operation was followed by carcinomatous infiltration in the lateral lymphatic space. Thus, however, did not interfere with micturition.

In Swan's opinion, malignancy occurs in apparently benign hypertrophy of the prostate more frequently than is generally believed, and therefore every gland removed at operation should be subjected to a close microscopic examination before diagnosis of entirely benign enlargement is made. HERMAN L. KATZSCHNER, M.D.

Judd, E. S. On the Surgical Treatment of Diseases of the Prostate Gland. *Am. J. Surg.* 19, 3, 191, 300

Benign changes in the prostate are almost just so far as they interfere with the function of the kidney. Inflammation arising in the prostate in association with urethral infection usually subsides gradually as in other tissues; in certain cases, however, it goes on to suppuration and abscess formation, necessitating surgical relief. Prostatic inflammation usually occurs in young men or men of middle age at a time of life when the prostate is functionally active. In the cases of younger patients conservatism should be practiced. In men past middle age operation is usually desirable.

The trouble following benign enlargement of the prostate depends on the amount of interference with the function of the bladder and urethra. Benign enlargement develops in the gland like new growth. The tissues are compressed by the growth and form a capsule from which the adenomatous hypertrophy can be readily enucleated. If prostatectomy is performed in the early stages of the enlargement there should be no mortality and only low morbidity. Difficulty arises from the impairment of important functions as a result of long standing obstruction.

Cancer of the prostate in most cases arises in the posterior lobe, that portion of the prostate which is

When suprapubic bladder drainage is necessary the incision should be made large enough so that the peritoneum may be pushed out of the way.

Cancer of the prostate may be present and may metastasize without causing prostatic enlargement or urinary difficulty.

One third of all prostatic cancers have formed metastases when first seen.

The treatment of cancer of the prostate consists of radium radiation and surgery.

Hematuria should be investigated as soon as it is noticed. Even if the bleeding stops a complete urological examination should be made as frequently lesions of the urinary tract do not bleed for periods of several months.

As cystitis does not occur as a primary infection the urinary tract should always be examined before treatment for cystitis is begun.

The pyelitis of pregnancy is an acute exacerbation of an already present chronic pyelonephritis. Foci of infection are easily found. Before going to term pregnant women should have all infected teeth and other possible foci of infection removed.

Chronic pyelonephritis may be symptomless at times. Frequently the urine is normal. A cold or other acute infection will cause acute attack with the usual symptoms.

Renal stones may be symptomless. Indication for surgery, the treatment consists of the removal of foci of infection and pelvic lavage.

In every case of pelvic or abdominal pain ureteral stone should be thought of as a possible cause. Surgery is rarely necessary to remove ureteral stones. Manipulation should always be tried before operation is advised. Twenty per cent of ureteral stones on the right side are wrongly diagnosed.

Bladder tone may be symptomless. Litholapaxy should be done if the stone is not too large.

Tumor of the renal area or upper abdomen can be differentiated only by means of the cystoscope with ureteral catheter and the pyelo-ureterogram.

LOUIS GROSS, M.D.

IBBI, J. H. and Colston, J. A. C. A Note on the Bacteriostatic Action of Urine After the Intravenous Admin. Intration of Mercurochrome to Normal Rabbits. *Bull. John H. P. Hosp.* Sept. 9, 1930, 20.

Preliminary tests before the administration of the drug included the determination of the body weight, phenolsulphonphthalein test of excretion, and examination of the urine to exclude the presence of casts or albumin, and of the faeces to exclude diarrhoea. A freshly prepared per cent solution of mercurochrome was then injected into the marginal ear vein. Controls on the identification of colonies obtained were made in every experiment. It thus was possible to determine the number of organisms present at the time of inoculation and at the end of the period of exposure. The action of normal urine having been determined before the injection of the drug, it was possible to estimate the

effect of the drug upon it. In cases in which the normal urine was bacteriostatic, an increase in inhibition after the injection of the drug could be shown. As inhibition was regularly noted after the injection, other factors remaining the same, the authors feel justified in attributing such action to the drug or its derivatives. The hydrogen-ion concentration of the urine was determined in every case in which a sufficiently large specimen was obtained. No marked or regular variation was found after injection.

The article contains several tables showing the inhibitive action of urine following the intravenous injection of 1, 5, and 10 mg/kg of mercurochrome. In two cases bactericidal urine was obtained in one after single injection of 1 mg/kg and in the other after single injection of 5 mg/kg.

In conclusion the authors state that the clinical trial of moderate intravenous doses of mercurochrome in bacillus coli infections of the urinary tract is justified from the point of view of bacteriostatic action.

C. RUTHERFORD O. CROWLEY, M.D.

Magoun, J. A. H. J. Absorption from the Urinary Tract. *J. Urol.* 9, 3, 1, 67.

In a series of experiments carried out by the author it was found that certain dyes and bacteria were absorbed from the normal kidney ureters and urethra. A large series of experiments performed previously with regard to the absorption of various dyes and the bacillus prodigiosus from the bladder it was found that the dyes were absorbed to a slight extent, but that there was no absorption of bacteria.

The anous portions of the urinary tract differ greatly in their absorptive powers. The kidney absorbs dyes and bacteria to marked extent. The ureter and urethra absorb dyes readily but bacteria less readily. The bladder on the other hand, absorbs very small amount of dye and no bacteria.

In cases of pyelitis, the clinical phenomena of chills and fever may be due to the absorption of urine and bacterial toxins. Reactions following cystoscopy occur much more often in males than in females, possibly because of the absorption of bacteria through the prostatic urethra.

An attempt was made to study absorption under pathological conditions, and the path by which absorption takes place is not discussed. It may be assumed that absorption occurs through the blood and lymphatics, especially the former.

The author concludes that the kidney has the greatest absorptive power, the urethra the second greatest, and the ureter the third.

Bacteria could not be recovered from the blood stream or various organs after their injection into the normal or the acutely inflamed bladder.

Experimentally and clinically bacteria may pass from the pelvis of the kidney into the blood.

In certain cases the kidney once infected may act as focus for secondary bacteremia.

A. J. SCHWARTZ, M.D.

SURGERY OF THE BONES JOINTS MUSCLES, TENDONS

CONDITIONS, OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Katsenelson P. R. The Conflicting Properties of Periosteum and Bone Medulla in the Formation of Bone (La propiedades opuestas del perioste y de la médula ósea para la constitución del hueso) *Prog. d la Cir. Madrid* 9:3 xiv 4

In experiments on dogs Katsenelson found that the microscopic picture was the same when periosteum was transplanted to bone medulla and bone medulla was transplanted to the deep surface of periosteum. In both cases there was absolute inhibition of the capacity for bone regeneration. He draws the following conclusions:

The periosteum and the bone medulla are the tissues that form and regenerate bone. It must be assumed that their activities are very different because if they were analogous, the combination of both tissues would result in the sum of their effects, whereas both the introduction of periosteum into the bone medulla and the transplantation of bone medulla to the deep surface of periosteum impedes the union of fractures and may give rise to pseudoarthrosis.

These findings explain the formation of pseudoarthrosis in fractures. When there is considerable disruption of the periosteum in a comminuted fracture it is not surprising that pseudoarthrosis is produced or union of the fracture is delayed as we now know that, for their full activity the periosteum and medulla must be kept separated by bone.

3 In operating on pseudoarthrosis care should be taken to strip the zone of cartilage between the two extremities of the bone and to see that no medulla is mixed with periosteum and no periosteum is mixed with bone medulla.

4 In the repair of bone defect by the transplantation of living bone care must be taken that the living bone covered by its periosteum is applied in such a way that its periosteum will not come in contact with the medulla of the extremities of the bone to be repaired. W. A. BARNES

Ochsner A. J. Osteomyelitis. *J. Lancet* 9:3 xlv 35

In acute osteomyelitis early diagnosis and immediate treatment are of great importance because on account of the rich vascularity of bone the disease invades very rapidly. Negative X-ray findings do not contra-indicate operation. Positive X-ray findings are present only after the disease has caused considerable destruction. Drainage should be instituted as soon as it is possible and the affected part immobilized.

If the process is allowed to continue or if the incision is not sufficiently extensive the process may burrow into the joint. The most common invaders are the staphylococcus, less frequently the pneumococcus, colon bacillus, typhoid bacillus, and streptococcus are found. The incidence of the condition is three times as high in boys as in girls. Of the 51 cases at the Augustana Hospital, Chicago, the femur was involved in thirty-nine, the tibia in thirty-one, the humerus in nine, the fibula in seven, and the radius and ulna in one each.

Common complications are the exanthemata, typhoid fever, pneumonia, pleurisy, tonsillitis, abscesses of the teeth, trauma, exposure, exhaustion, and funiculosis.

In chronic osteomyelitis the sequestrum should not be removed until an involucrum has formed. When a deep hole remains it may be filled in by sewing the surrounding skin and subcutaneous tissue into the bottom of the trough.

REPORTER: S. REECE, M.D.

Joel C. A. Metastatic Tumors of Bone. *Am. J. Surg.* 9:3, xi 38

Secondary tumors of bone may arise by (1) direct extension from surrounding tissue, (2) extension through the lymph channels or (3) extension through the blood stream. As the first method of direct extension is not strictly metastatic it is not considered here.

In order to make the theory of lymphatic extension acceptable it must be shown that the lymph channels extend into the bone marrow. This has not been demonstrated. They have been traced into the compact bone but are stopped by the endosteum.

The blood stream as the medium of metastasis, as first studied by von Recklinghausen who concluded that secondary tumors in bone arose from malignant emboli lodged in the marrow capillaries. It has been shown by several pathologists that cells from a malignant tumor can usually enter the blood stream through the vasa vasorum. There seems to be conclusive evidence also that metastases nearly always begin in the cellular red marrow. The infrequency of metastases in the distal limb bones is explained not by their greater distance from the primary growth, but by the fact that they contain very little red marrow.

On searching 44 autopsy records for bone metastases, the author found fifty-three cases. The primary growth was carcinoma of the breast in thirty-four, carcinoma of the uterus, thyroid and oesophagus in two each, and carcinoma of various other organs in one each. The bone metastases occurred in the vertebrae in 6 per cent, the ribs in

30.4 per cent, the sternum 14.7 per cent, the femur 14.7 per cent, the skull in 1.3 per cent, and in six other sites in from 7.9 to 1 per cent. Other observers have found the skull the most common site. Ewing places the sternum, ribs, and femur before the skull and vertebrae in order of frequency of involvement.

A case of metastases in the sternum showed the microscopic structure of scirrhous carcinoma, that of the primary breast tumor. Another in the humeri was of osteoplastic nature but in spite of this two spontaneous fractures occurred.

With regard to thyroid metastases in bone Hanokvich stated that in a fourth of the cases there is no obvious clinical enlargement of the thyroid. As a rule the metastasis is of slow growth. It may be the only one in the body. The thyroid nature of these bone tumors is proved by their content of iodine and colloid. The author tabulates forty-four cases of metastatic thyroid tumors in bone associated with normal thyroid or benign goiter. It is claimed by some pathologists that there may be minute islands of malignancy in the thyroid which escape detection by the ordinary methods of examination. However, after removal of the metastasis there is usually no recurrence. In one case in which the thyroid gland had a small nodule in one lobe, tumor was removed from the clavicle which showed a structure identical with that of normal thyroid. There seems to be constant relation between the thyroid tumor and its metastases as to the degree of malignancy.

Tumors of the prostate have the greatest tendency of all primary growths to produce bone metastases. The secondary growths are multiple and may have wide distribution in one case the skull, pelvis, ribs, scapula, humerus, and clavicle were involved. While there is a characteristic osteoplastic tendency which, according to Axhausen, is due to the stimulus from the carcinoma cell itself, the ossification is usually accompanied by osteoclasts and in some cases spontaneous fractures occur.

Tumors in any part of the urinary tract seem to share with those of the prostate the tendency to form metastases in the bones. The author reports four cases of carcinoma of the bladder with secondary deposits respectively in the radius, skull, tibia, and ribs.

Hypernephromata often are symptomless as primary growths. Therefore their metastases in bone may sometimes be erroneously considered primary. Cases with involvement of the humerus, clavicle, tibia, radius, and ulna are reported. Cases of bone metastases from uterine tumors are numerous. One case of testicular tumor with deposits in the spine is reported.

Tumors of the tongue do not give rise to bone metastases very frequently but one case is reported of an epithelioma of the femur primary in the tongue. Museum specimens are mentioned which show metastatic carcinoma of the femur, pelvis, and ribs, respectively from primary growth in the oropharynx. Cases of carcinoma of the stomach and the large intestine causing metastases in the bones, and

a case of liver growth causing a deposit in the spine are on record.

In one case of melanotic sarcoma of the thumb deeply pigmented melanotic growths were found in a rib and in the femur.

In the diagnosis of these bone tumors the primary growth is sometimes overlooked. Five cases of renal and adrenal neoplasms are mentioned in which the bone tumors were regarded as primary because of the obscurity of the primary lesions. According to Dehbet, the secondary tumors usually affect the shaft while primary lesions are in the epiphyses. Pain is not common. Deformity or spontaneous fracture may be the first sign noted. Anemia may be severe. Roentgenograms help materially but as a rule do not differentiate between primary and secondary growths.

The benefit from operation on secondary growths is usually transitory but in some cases the patient has lived eight or ten years after resection. Of the operative procedures, limited excision is usually to be preferred to amputation, especially for growths secondary to thyroid and renal tumors.

WILLIAM A. CLARK, M.D.

Chaton and Caillods. Myositis Ossificans Localized in an Area of Necrobiosis (Foyer de myosite ossifiante localisée en état de nécrobiose). *Presse méd.* Par. 9 3 XXXI 28

The patient was a farmer who 40 years previously sustained a severe injury of one leg, including dislocation of the knee and fracture of the ankle. Subsequently a bony tumor appeared on the leg. When opened this was found to be reddish soft in the center and formed in linear columns much like sarcoma. No bleeding was encountered. The entire mass was removed.

The authors believe that at the time of the accident the muscles in the leg were torn and that a chronic sclerosing myositis then developed which ended in an ossifying process.

Histologic examination confirmed the presence of ossifying myositis and the absence of sarcoma.

In conclusion the authors state that the type of tumor described should be borne in mind in order that it may not be confused with sarcoma.

KILLGORE BRENN, M.D.

Klimasewsky N. J. A Case of Multiple Xanthomatous Granulomata in Tendons (Ein Fall multipler xanthomatöser Granulome in den Sehnen). *Arch f. klin. Chir.* 9 3, CXXXV 73

The case reported was that of a man 40 years of age who for twelve years had noted the presence of multiple nodules along the course of the tendons in his legs and forearms, on the dorsal aspect of his hands, and at the sites of insertion of the tendons under the skin. In part, the localization was symmetrical. Microscopic examination revealed typical so-called xanthoma cells in the masses.

The author states that this case had nothing in common either clinically or pathologically with the

so-called xanthoma cells described in the literature. It differed from them by the multiplicity of the nodules, the exclusive involvement of the tendons, and the absence of giant cells and pigment. Kusunokiyoshi defines the changes as circumscribed accumulations of xanthoma cells in granulation tissue which had undergone transition to fibrous tissue within the tendon and lifted up the normal structure of the tendon. He regards the condition as an inflammatory rather than a neoplastic process, and attributes it to the local excretion of cholesterol combinations due to general disturbance of metabolism. *RIMMER (2)*

Fisher, A. G. T.: The Nature of the So-Called Rheumatoid Arthritis and Osteo-Arthritis. *Brit. M. J.* 1923. 23.

The underlying reasons for the present state of confusion in the problem of arthritis are ignorance of the fundamental principles of the physiology of the articulations, their histologic structure (especially regarding the synovial membrane), and the true nature of the pathologic changes in the disease. There is also a woeful lack of uniformity in the nomenclature and of co-operation between the surgeon, internist, and specialist in the diagnosis and treatment.

The author recognizes three types. Type 1, in which the disease begins in the central cartilage with late involvement of the synovia. Type 2, in which it begins in the synovia and Type 3, in which it seems to begin simultaneously in the cartilage and synovia.

Type 1. The earliest changes are in the central cartilage. Macroscopically this area is yellowish instead of the normal translucent bluish white. On staining the superficial layer takes the stain very faintly. At later stage fibrillation or splitting of the matrix is observed. This process is regarded as degenerative. Later still there is proliferation of the marginal cartilage and bone, due supposedly to irritation, which results in the lipping seen in roentgenograms. The cartilage tends to disappear. The synovia finally becomes more illous and vascular without diminution of the synovial fluid. Arterio-sclerotic changes may supervene.

Trauma due to repeated mechanical stress or contusion, usually occupational in nature, may be an etiological factor in this type. The rôle of bacterial or metabolic toxins as a cause is still undecided.

Type 2. Every stage of ankyrosis may be seen, from marked pain and spasm with contractures to mild symptoms without limitation of motion. The term "atrophic" as applied to this type is unfortunate since the atrophy is the result of disease rather than a primary condition. The process is of a pronounced inflammatory nature. The articular cartilage may be invaded by panus of granulation tissue growing in from the vascular synovia. Periarthritic lipping, which may occur in the later stages, may be an attempt of the body to extend the articular surface.

The lateral part of the articular cartilage is better nourished than the central part because of its perichondrium and better blood supply. This may explain why the lateral areas are less susceptible to degenerative changes than the central parts. Pressure probably plays no part. The author has noted in a large number of knee cases that the changes nearly always begin in the trochlear area of the femoral cartilage and the central part of the patellar cartilage rather than the condyles, where the pressure is greatest. After the experimental production of a condition of osteo-arthritis by removal of the central cartilage it has been noted that repair resulting in the characteristic lipping takes place around the margins and not in the denuded central area.

Although it is most difficult to establish the infectious nature of the disease, the problem of etiology is one for the bacteriologist and chemical pathologist working in conjunction with the surgeon.

WILLIAM A. CLARK, M.D.

Schmidt, G.: Habitual Displacement of the Ulnar Nerve in Cubitus Varus and Valgus (Ueber habituelle Nervenverletzungen in beugender und gebeugter Ellenbogenstellung). *Zentralbl. f. Chir.* 1913. 474.

The literature contains little regarding this condition. Ulnar nerve displacement occurs in both cubitus valgus and cubitus varus. Cubitus varus especially in one such displacement as in this condition the nerve stands out like bowstring. Mowbray has reported one case of nerve displacement in post fetal cubitus varus.

In this article the author reports a case of bilateral cubitus varus in which, upon sudden extension of the arm and hand pain radiated into the hands, especially the little finger. The angle of the cubitus was 35 degrees. In the hand the ulnar bone protruded out and ulnar ward. When the forearm suddenly extended, the nerve slipped out from its bed. As there was no history of injury or disease it may be concluded that the cubitus varus, as of fetal origin and due to faulty embryonic development or lack of sufficient uterine space. The forced position of the hand also proved the constitutional nature of the ligaments and joint capsule. *COMBES (2)*

Sattler, F.: Synovial Inflammation of the Tendon Sheaths of the Hands and Feet as Occupational Disease (Synoviale Sehnenhülsentzündungen als Gewerbekrankung an Händen und Füßen). *Arch. f. H. Chir.* 1913. 99.

After review of the anatomy of the tendon sheaths and the location of the different bones in the hands and feet the author discusses in general the nature of inflammation of the tendon sheaths which affects particularly brakemen, locksmiths, carpenters and women whose occupation requires twisting and rubbing motions of the hands. The process is usually subacute.

Sattler recommends conservative treatment by puncture and repeated injections of from 1 to 3 c.c.m. of Calot's solution. Injections of larger quantities may produce irritation which will cause the formation of melon-seed bodies eventually simulating tuberculous. By this conservative treatment painful contraction is prevented. TOLSON (7)

Lang, F. J. Microscopic Findings in Juvenile Arthritis Deformans—Legg-Calvé-Perthes Osteochondritis Deformans Coxae Juvenilis—and Comparative Research Regarding the Epiphyse of the Head of the Femur with Particular Reference to the Forca Centralis (Mikroskopische Befunde bei juveniler Arthritis deformans—Osteochondritis deformans juvenilis coxae Legg-Calvé-Perthes—nebst vergleichenden Untersuchungen über die Femurkopfepiphyse mit besonderer Berücksichtigung der Forca centralis). *Arch. f. path. Anat. u. exper. Med.* 1909, 70.

This article reports a very thorough macroscopic and microscopic study of three cases of juvenile arthritis deformans and is illustrated by thirty seven excellent photographs and diagrams.

From anatomical and histological facts it would appear that in arthritis deformans the margins of the epiphysis of the femur and the round ligament of the head of the femur are the first to exhibit changes. This is true also in juvenile arthritis deformans. The author describes the normal fovea and epiphysis of the head of the femur in childhood (1) the second, seventh, ninth, and thirteenth years (2) for purposes of comparison.

The diagnostic features of juvenile arthritis deformans are the limitation of the condition of the epiphysis of the femur and the fovea of the head of the femur and the evidence of trauma.

From the standpoint of etiology two forms are distinguished one, which is bilateral, dependent on developmental disturbances, and characterized by remarkable symmetry and the presence of numerous points of ossification in the epiphysis of the head of the femur that have developed in an irregular and interrupted manner and the other, which is unilateral and appears to be the result of injury to the epiphysis of the femur and the fovea of the head of the femur.

One of the author's cases of bilateral juvenile arthritis deformans was that of a 9-year-old boy. The histological changes in the cartilaginous ground substance and the osteocartilaginous border are not limited to the region of the centers of ossification in the epiphysis, being found also in the osteocartilaginous border of the diaphysis. In the acetabulum initial stages of arthritis were seen in areas characterized by penetration of the cartilage by capillaries. In the fovea acetabuli the chief change of peculiar nature was deposit of osteophytes caused by dragging on the round ligament of the hip joint which had been put in tension by flattening of the head of the femur.

One of the author's cases of unilateral arthritis deformans limited to the region of the fovea, as that of a 10-year-old male in whom a large encapsulated

cyst due to hemorrhage had developed apparently as the result of an injury sustained in youth. On closer study the local continuation of a typical arthritis deformans was seen in the region of the margins of the fovea.

As a result of mechanical influences of functional or traumatic nature all of the cases studied showed foci of splinters of calcified cartilaginous substance and collections of debris brought often from a distance with reactive changes in the vicinity. In certain areas bony trabeculae had been split and their fragments rubbed smooth by long continued friction and coated with mucoid material.

In both forms (1) juvenile arthritis deformans (2) functional and traumatic injuries play a decisive role and their progress and sequelae determine the morbid progress character of the disease.

As to whether cretinoid bone distention follows the prearrangement of juvenile arthritis deformans (Laeven) the author states that the head of the femur of a 1-year-old cretin examined for comparison showed no signs of advancing blood vessel, marrow space or bone formation, and hence no signs of deforming arthritis in spite of various local changes due to loosening and separation of the cartilaginous ground substance of the femoral epiphysis in the region of the osteocartilaginous border of the diaphysis. STROMA (2)

Robin. Two Cases of Deforming Osteochondritis of the Hip One Followed for Eleven Years and the Other Complicated by Congenital Lumbar Kyphosis (Deux cas d'ostéochondrite déformante de l'hanche dont un pendant onze ans et l'autre accompagnée de cyphose congénitale lombaire). *Ann. d'orthop.* 1913, 33, 79.

The first case was that of a girl of 9½ years who began to limp eight months before she was examined by the author. Her hips appeared thickened but the limbs did not resemble that of congenital dislocation. Pressure over the heads of the femora while she was in the recumbent position revealed slight looseness. There was no inguinal dentis. At the age of 11 months of the hips were normal except for limitation of abduction. The X-ray confirmed the diagnosis of infantile deforming osteochondritis. There were changes in the head and neck of both femora and in both acetabula. The epiphyseal line of the head of the femur flattened the epiphyseal cartilage showed irregularities, and the femoral head was enlarged. On the right side there was loss of calcification. Both acetabula were irregular and the joint spaces were enlarged. The second third and fourth lumbar vertebrae showed kyphosis and in this area pressure was slightly painful. Flexion, lateral bending and rotation of the spine elicited no pain. The reflexes and sensation in the legs were normal.

A retro posterior X-ray examination of the spine showed dorsolumbar scoliosis to the right with decalcification of the third lumbar vertebra. The lateral view showed that the body of this vertebra

was reduced two thirds in size. The four other lumbar vertebrae were more or less deformed. A fenestrated plaster cast was applied.

This case was interesting on account of its bilateral character which is unusual, and on account of the changes in the acetabula and the lumbar vertebrae. The author is inclined to believe that the change in the spine is a congenital aplasia.

The second case was that of a 13 year-old boy with coxalgia and lump on the right side. Hip movement was normal except for slight limitation of abduction. The X-ray revealed osteochondritis eleven years later this patient was vigorous and without any limp or disability but with slight trophy of the thigh muscle. Radiograms taken eleven years apart are shown.

KELLNOX SMITH, M.D.

Kremscher, P. H. Unusual injuries about the knee joint. *Surg. Cl. N. Y.* 9:310-7.

The author reports three cases of injury to the knee joint which prevented extension of the leg on the thigh but showed no external evidence of trauma except slight bruising of the skin. In the first the patella was dislocated downward, in the second it was dislocated upward, and in the third it was dislocated far outward from its usual position.

Case 1. The patient was a man 9 years of age who while exercising in gymnasium suddenly slipped, striking his right knee upon metal bar. The accident caused excruciating pain. The leg was straightened but very soon the knee joint began to swell. The patient was able to flex the knee but not to extend it. He entered the hospital six hours after the accident. The X-ray revealed no injury. Physical examination showed the knee to be filled with fluid. Aspiration was done with the examining finger upon the skin just below the patella. After one week it was possible to introduce the finger deeply into the joint cavity.

At operation semitendinous incision was made one inch lower than the line of rupture. The capsule and the skin was dissected back with considerable difficulty. Numerous shreds of tissue were found, some attached to the patella and others to the tubercle of the tibia. The patella was not red and the shreds of tendon were brought together. The joint was then closed without drainage and placed in a straight posterior plaster splint with Buck extension of about 15°. After six weeks the patient as permitted to make effort at flexing the knee. Eight months after the operation he was able to extend the leg without the slightest difficulty.

Case 2. This case was that of a man 9 years of age who was injured in an automobile accident. X-ray examination was negative. On physical examination ten weeks after the accident the stump of the quadriceps extensor tendon as found 1½ in. above the upper end of the patella. A transverse incision was made. The joint contained very small quantity of clear fluid. The tendon

stump as found was too short to allow approximation. Two lateral incisions were made just at the side of the rectus femoris tendon and extending upward about 1 in. to divide the attachment of the vastus lateralis and the vastus medialis, the stump of the tendon was brought down to the patella and the tendons of the lateral muscles were sutured in position. The patella as prepared for the attachment by incising and defecting the perosteum backward and drilling three holes through the patella from before backward. The tendon was then brought down and sutured with kangaroo tendon by several mattress sutures. This having been done the reflected perosteum was brought back and united to the tendon, the wound closed, and a posterior splint applied. After seven weeks the patient was permitted to make active motion of the knee joint. He was able to flex the leg actively on the thigh and to extend it completely with considerable strength.

Case 3. The third case was that of a woman injured in an automobile accident. Examination showed the patella to be displaced outward upon the external aspect of the knee joint with the leg in a flexed position. The patient entered the hospital one year after the accident. She walked with cane with the right leg in a knock knee position, distinctly flexed. A modification of the Trethoven incision was made and the tissues were exposed. The fibers of the vastus medialis were found severed and the capsule torn. The capsule and the fibers of the vastus medialis were reconstructed and the wound closed with drainage. The leg is now straight and has good function, and the knee cap is in normal position.

S. C. WOODBRIDGE, M.D.

Boulanger and Bowheiser. A Clinical and Anatomical Study of Cases of Congenital Genu Recurvatum. (*Fract. luxation et ankylose par défaut du développement du ligament croisé*) *Rev. d'orthop.* 1917, 22:2, 245.

Congenital genu recurvatum is probably the result of ligamentous and dysphyseal changes with muscular contractions due to various positions in the uterus. The pressure may be either extra or intra uterine. Subluxation of the tibia or femur results and is followed by hyperextension of the leg on the thigh. Mechanical factors may explain the many of the cases of congenital hip dislocation associated with this condition.

The patient whose case is reported was a 6½ year-old girl who entered the hospital for the treatment of congenital dislocation of the left hip. Genu recurvatum on the left side had been present since birth. The child's first teeth appeared when she was 8 months old. She was not able to walk before her third year. On her admission to the hospital the left leg lay in slight abduction and external rotation and showed slight shortening. There were deep folds in the peripatellar skin region, some degree of genu valgum, almost complete obliteration of the popliteal folds, and compensatory scoliosis.

with pelvic tipping. The left foot was in equinus. Palpation revealed posterior dislocation of the femoral head. The knee showed looseness and marked limitation of flexion.

When the patient walked the genu recurvatum became more marked and she required support. Further examination revealed a total loss of power in the extensors of the left leg. Thus the authors regarded as the result of an overlooked infantile palsy.

The Roentgen ray showed typical dislocation of the hip, and the lateral view of the knee joint revealed absence of ossification in the patella with antero-posterior flattening of the elongated femoral epiphysis.

The hip was easily reduced by open operation and the leg then immobilized in flexion abduction and internal rotation, with the knee flexed to 90 degrees. After a few days, fever, sore throat and a scarlatiniform rash appeared and were followed by septicæmia and death.

At autopsy great difficulty was experienced in reproducing the hip dislocation which had been operated upon only a month before.

Anatomical study of the knee showed the subcutaneous tissue infiltrated with fat and the muscles pale and fatty but well developed and in normal position. There was no dislocation of the biceps tendon. A pus sac was found under the quadriceps. The patella was entirely cartilaginous. The femoral condyles were narrow and the internal was longer than the external. The menisci were thickened and the upper articular surface of the tibia was inclined forward and downward more than normal. All ligamentous insertions were normal.

KILLGUS SEED, M D

Dujurier G and Weil, M. P. Gonorrhoeal Arthritis of the Knee; Failure of Serotherapy. Arthrotomy; Cure with Conservation of Movement. (Arthrite blennorrhagique du genou; échec de la sérothérapie, arthrotomie, guérison et conservation des mouvements.) *Bull et mem Soc de chir d Par* 9, 3, xix, 308.

The author operated upon three cases of gonorrhoeal arthritis of the knee which he had treated unsuccessfully with intra-articular injections of serum. He opened the joint, cleaned out the detritus, washed the surfaces with ether and closed the capsule completely. Mobilization was begun early and good function with only slight limitation of movement was obtained.

In the discussion, Bary and Rouvillous stated that in some cases of gonorrhoeal arthritis intra-articular serotherapy is very efficacious, but in others is without effect or harmful. If local serotherapy is not followed by immediate success, it should be abandoned as it may cause irritative arthritis.

They reported that he had treated three similar cases by arthrotomy with ideal results.

RUDOLPH MAERZ, M D

Lewin P. Juvenile Deforming Metatarsophalangeal Osteochondritis. *J Am M Ass* 9, 3, ix, 49.

In juvenile deforming metatarsophalangeal osteochondritis the distal epiphysis of the metatarsal is flattened, the neck is broadened, the epiphyseal line is irregular and the joint space is widened. There is usually diminished cupping of the phalangeal articular surface and also possibly the presence of loose bodies.

The condition is thought to be analogous to Legg-Perthes disease of the hip, Kocher's disease of the scapoid, and Osgood-Schlatter disease of the tibia. It was first described by Freiberg in 1915 as "infracture" of the metatarsal head. The author has collected sixty-three case reports from the literature and adds two of his own.

The condition has been attributed to trauma, disturbances of circulation, and infection. Freiberg, Campbell, and others believe that trauma is the cause.

The second toe is the one most often affected, the explanation being that this metatarsal bears the brunt of the impact in jumping on the balls of the feet because it is longer than the others. Legg regards trauma as the cause of a circulatory disturbance which results in atrophy of the epiphysis. Arxhausen attributes the lesion to blocking of the end arteries by emboli of tuberculous fragments or weakly virulent pyogenic cocci.

The disease is most frequent in adolescence. The symptoms are pain, tenderness, and limitation of motion. Swelling is usually present because of exudate but no increase in joint tension is demonstrable.

It is possible that certain cases of metatarsalgia, especially those of children, may be due to this condition.

The diagnosis is based on the history and the roentgen-ray examination. In the differential diagnosis, metatarsalgia, periostitis, fracture, dislocation, syphilis, and Still's disease must be considered. The prognosis is excellent, the symptoms lasting only a few weeks.

The treatment is similar to that of metatarsalgia, with relief from weight bearing.

The first case reported by the author was that of a girl of 14 years. Pain had been present in the base of the third toe for six months. There were no visible or palpable abnormalities. Tenderness was found over the head of the third metatarsal. The diagnosis was confirmed by the X-ray. A cure was effected in five weeks by the application of splint to the toe and the use of crutches.

The second case was that of a girl of 12 years who complained of pain in the ball of the foot and tenderness over the head of the second metatarsal which had been present for two weeks. The diagnosis was confirmed by the roentgen ray. The symptoms disappeared in about two months under treatment with the deep-therapy lamp and alpine light.

WILLIAM A. CLARK, M D

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Hey Groves, Putti, MacAusland and Others. Discussion on Arthroplasty at the International Congress of Surgeons. *Brit M J* 1933, 11.

Arthroplasty was defined as an operation performed upon an ankylosed joint to restore mobility. Hey Groves, Putti, and MacAusland agreed in general on the following points:

1. The patient should be of an age and state to withstand long and traumatizing operation, mentally cooperative, and able to endure tedious hospitalization.

2. The most favorable results are obtained in cases following trauma, pyemia, or gonococcal infections in which the infection is at an end.

3. Osseous ankylosis is easier to correct than fibrous ankylosis. Ankylosis of tuberculous origin should be operated upon only exceptionally.

4. There are absolute indications for arthroplasty in ankylosis of the mandible, bilateral ankylosis of the hip, ankylosis of the elbow in extension, and polyarticular ankylosis.

5. In cases of ankylosis of one knee, arthroplasty should be divided with caution as lateral stability and security are of first importance.

With regard to the development of the operation, special reference was made to Bier's or Bier's chromicized pig's bladder and Murphy's advocacy of the pedunculated flap. Putti and Page have found the use of free fascia most successful. Essentials in the operation are the formation of a sufficient gap between the bone ends, the shaping and covering of the articular facets, the provision of ligaments and synovial fluid, the prevention of undue mobility and the restoration of function.

The first passive motions should be begun twelve to fifteen days after the operation. Sanby of Lyons stated that surgical mobilization of ankylosed joints has been little done in France as Olier's mobilizing reaction still continues in vogue. He maintained, however, that arthroplasty is an improvement.

Elmslie of London contended that the ankylosis of any individual hip, knee, or ankle in good position is preferable to the results obtained by any form of arthroplasty but advocated the latter in cases of ankylosis of non weight-bearing joints in which it is easier to obtain free movement.

Junek stated that in arthroplasties done in Krakow in a clinic in Prague the interposition method with the use of fat grafts has given good results.

R. C. LORRAN, M.D.

Hecquet. Total Subperiosteal Removal of the Clavicle in a Case of Osteomyelitis and Regeneration of the Bone (Ablation totale sous-périostée de la clavicule dans un cas d'ostéomyélite et régénération de l'os). *Presse méd.* Par 1933, 33, 76.

In osteomyelitis of the clavicle in adolescents an incision through the periosteum the entire length of the bone is usually sufficient to effect cure. In

some instances, however, the inflammation continues and a sequestrum of the entire bone is formed.

In the author's case of acute osteomyelitis the sequestra and the clavicle were removed *en bloc*, but because of preservation of the periosteum the bone was completely regenerated. The clinical course was complicated by orchitis, temporomandibular inflammation, and myocarditis. All of these cleared up after the use of autogenous vaccines. The orthopedic and functional result was very good. There was no compression of the brachial plexus or pain in the shoulder or arm. Function was completely restored.

KILLGUS SMITH, M.D.

Page, C. M.: Four Cases of Flexion Contracture of the Forearm Treated by a Muscle-Sliding Operation. *Proc Roy Soc Med Lond* 1933, 26, Sect Orthop. 43.

The operation described consists in detaching the origins of the entire flexor group of the forearm. If the flexor longus pollicis is contracted, the process of muscle stripping is carried cross the lateral osseous membrane so that the attachment of the thumb flexor to the front of the radius will also be raised. The bicipital fascia is divided if necessary. The hand is put up in the corrected position on a metal splint. A few days later the splint is replaced by a plaster mold.

Voluntary control of the muscles is lost or becomes very weak but is recovered gradually after a few days. Throughout the convalescence, physiotherapy is employed with proper splinting.

Of four cases treated in the manner described the results were good in two, fair in one, and unsatisfactory in one.

REMOUSE S. RICE, M.D.

Colson, P. D. Hamstring Transplantation for Quadriceps Paralysis. *J Bone & Joint Surg* 1932, 47.

The author reviewed 10 cases to determine the end results of transplanting one or more hamstrings for loss of function in the quadriceps. In seventy-eight cases transplantation of the biceps was done, and in twenty-three the inner hamstrings were used. Seventy-five of the cases were operated upon by Whitman.

In paralytic cases of the quadriceps alone without associated joint deformity an ideal result may be obtained. In cases of deformity such as knock knee, etc., the deformity must be corrected first.

In walking, extension is assisted by gravity. Weight bearing necessitates strong quadriceps to hold the leg extended.

In some cases stabilizing operation on the foot is necessary to permit the use of the transplanted hamstrings. In twenty cases astraglectomy was performed. The technique was the same for all cases. An incision was made on the outer or inner side of the thigh, extending from about the middle to little below the knee. The biceps insertion with a section of bone or cartilage was separated from the head of the fibula with the short attachment of the

biceps to the femur care being taken not to injure the peroneal nerve. The muscles were exposed high enough to permit pull in a direct line from the tibia to the patella. An incision was then made to expose the quadriceps tendon and the transplanted tendon was drawn through the subcutaneous tunnel. The bony fragment on the end of the tendon was secured under the peroneal covering of the patella by means of kangaroo sutures.

The wounds were then closed with plain catgut and a cast was applied from the toes to the groin with the knee in full extension. The cast remained on for from six to eight weeks. The posterior shell was then retained as splint and exercises begun in bed. After three or four weeks the patient was allowed to bear weight on the limb, but wore a supporting brace for several months.

The author draws the following conclusions:

Satisfactory results are the rule.

1. Deformity should be corrected before the transplantation is done.

2. Transplantation of the biceps gives better results than transplantation of the other hamstring, provided the biceps is strong.

3. Negative results may follow if the hip extensors are also paralyzed.

JOHN MITCHELL, M.D.

Engel, H. The Operative Treatment of Hallux Valgus on Physiological Basis (Zur Frage der operativen Behandlung des Hallux valgus nach physiologischen Grundweisen) *Arch f orthop Unfall Chir* 933, XII, 437.

The author using Gocht's material, investigated the question as to whether the old hallux valgus operation of Hueter as practiced at the university orthopedic clinic, compares favorably with the new method of Ludloff and Hohmann which is founded upon physiological basis. The operation recommended in Germany by Rose and in France by Sayre and later systematically employed by Hueter consists in removal of the head of the first metatarsal. Gocht practiced it for twenty-five years in numerous cases with excellent results. The author re-examined the cases treated in the period from 1906 to 1920. Eighteen of these he adds three more from Gocht's private practice.

Engel comes to the conclusion that Hueter's method of operation, which is still most favored in Germany and France meets with the physiological demands established by Ludloff and Hohmann. It does away with the deviation of the great toe, with the formation of bursa and exostoses on the median pole of the head of the first metatarsal, with tendon transplantation, and with subluxation and turning of the toe. The shortening of the first metatarsal through the removal of its head, and in some cases of a portion of the adjacent shaft results in balancing of the fixed and the elastic forces operating against the valgus position of the great toe. In injury to the supports of the arch, particularly the adductor hallucis, cure of the spreading arch usually does not occur. As a rule

the mechanism of the great toe is almost entirely restored as regards its active and static function in the course of a year and a half. Therefore in the author's opinion the old Hueter method of operating for hall valgus is as physiological as the method of Ludloff and Hohmann. The results obtained by Gocht with this method were satisfactory.

GLASS (Z)

FRACTURES AND DISLOCATIONS

Henderson, M. S. Non-Union in Fractures The Massive Bone Graft *J Am Med Ass* 923, LXIII, 463.

This article is based on a review of 1 cases of non union culled from approximately 1,000 cases of old fractures consisting of malunions, delayed unions, etc. that have been observed in the Mayo Clinic during the last ten years. In making this classification a sharper line has been drawn than formerly in separating the cases of non-union from the cases of delayed union.

One hundred and eighty-four of the 22 cases are traced. Union has occurred in 38 (75 per cent) and has failed to occur in forty-six (25 per cent). Twenty-seven patients were not traced, and ten are still under observation.

FINDINGS IN CASES MAY 1913

Bones	Cases	Result traced	Cases		Fail union	Not traced	Under observation
			No.	Per cent			
Femur	40	33	9	57.5	14	4	3
Hip	30	24	5	66.7	9	0	4
Shaft	54	44	30	88.9	8	8	0
Tibia	41	37	36	70.5	7	3	0
Humerus	30	5	14	93.3	3	3	0
Radius	8	4	0	85.7	7	4	0
Radius and ulna	0	0	0	100.0	0	0	0
Patella	0	0	0	100.0	0	0	0
Ulna	8	7	6	87.5	7	0	0
Clavicle	0	0	0	100.0	0	0	0
Total		84	38	75.0	46	7	0

The fractures involving the different bones are discussed in detail as to their site, etc. There were nine cases of non-union of fracture of the tibia which had been sustained at birth or in infancy. Operations performed in six of these before the age of puberty were all failures, but in the cases operated upon after the age of puberty union resulted. On the basis of this experience with intractable non union in children it is thought advisable to postpone operative measures until after puberty maintaining the length and alignment of the leg as well as possible by the use of braces.

It is found that detailed statistical study was of little or no value with regard to the etiology. All of the patients were free from constitutional disabilities which might have a bearing on the condition, with the exception of osteitis fibrosa cystica. Syphilis was a negligible factor in the series. Except in fractures of the hip, the interposition of muscle

combined with severe twisting and crushing trauma was regarded as the most probable common cause of non union.

A chemical analysis of the blood as made in twenty-one cases. In certain cases there was suggestion of lowered magnesium content, but otherwise the findings were negative.

Attention is directed to the fact that many failures are due to the lighting up of infections in old chronic cases, and that it is well to beware of the recently healed sinus, the scar that is red, local heat that persists, and *semihirs* my feel of the part. In the majority of cases the massen graft is preferred to the ordinary iliac graft of Albee. In addition the osteopneustical graft is used. Beef bone screws are employed to fix the graft firmly to the parts.

In reviewing the cases as a whole the author states that the incidence of non union was greater in the femur than in any of the other bones: there were forty ununited fractures of the neck and thirty of the shaft of the femur. The tibia ranked next with fifty-four, the humerus had forty-one, the radius alone had twenty, the radius and ulna combined, eighteen, the patella, nine, the ulna alone eight, and the clavicle, one. The causes of non union are usually indeterminate, but the later position of muscle fibers, fixation which is inadequate not only in quality but also in quantity (time) too early weight-bearing, and neediness in inspections and examinations when the union is delayed may be mentioned as chief among the local causes. In the author's experience general or constitutional conditions have rarely been of consequence. It seems paradoxical that any number of fractures may heal in a frail, pale, or out-poor-looking child with osteogenesis imperfecta, whereas not one may unite in a large, robust man. Severe crushing and twisting trauma may so devitalize the tissue and lead to the formation of scar tissue as to be a factor in the production of non union. There is also the inexplicable type of non union occurring even though the ends of the bone are in apposition, the position is all that could be desired, and the treatment is in all respects satisfactory.

The average percentage of successful results in the series of cases reviewed was 75, ranging from 57.5 in fractures of the hip to 93.3 in those of the radius. Named in the order of best results, the bones were the patella, radius, ulna, tibia, humerus, shaft of the femur and neck of the femur. The failures, the author believes, were due chiefly to the use of a small graft, improper and inadequate internal fixation of the graft, inadequate external fixation, and sepsis. There were twenty-two infections following operation, approximately 10 per cent. The fact that infection occurred in ten of the 33 fractures in the lower extremities and in twelve of eighty-eight fractures in the upper extremities suggests that the lower extremity is more resistant to infection than the upper. The rarity of infections following external operations on the feet substantiates this view.

The massive graft with proper internal fixation, the selection in the previously infected cases of the most opportune time for operation, the avoidance of prolonged operations, the maintenance of adequate postoperative fixation, and, in the lower extremity, the avoidance of too early weight-bearing will materially increase the percentage of successes.

M. S. HANCOCK, M.D.

Descamps, P. The Operative Treatment of Acromioclavicular Dislocations (Le traitement chirurgical des luxations acromio-claviculaires). *Bull. et Mem. Soc. de chir. de Par.* 9 3, 1913, 344.

The author has operated upon 8 cases of acromioclavicular dislocation complicated by rupture of the coraco-clavicular ligaments. In this severe form of dislocation the most important condition is the rupture of the ligaments. In the connection between the clavicle and the scapula, the fixation due to the ligament is of more importance than the mobility due to the joint. Therefore this connection must be restored in order that the shoulder girdle may be moved *en bloc* with the thorax.

In four cases the author brought the coracoclavicular process and the clavicle together by means of a strong wire without suturing the clavicle to the acromion directly. In two cases removal of the clavicle was necessary later. In the last case, strong wire was used. This tore after a few days, but not until sufficient consolidation had occurred.

The immediate results are satisfactory in every instance. The only patient whom the author has been able to trace for a long time has full mobility of the shoulder.

REYNOLD MAXX, M.D.

Davis, G. G. The Treatment of Dislocated Semilunar Carpal Bones. *Surg. Gynec. & Obst.* 1913, xxxvii, 5.

When dislocation of the semilunar carpal bone is diagnosed immediately it is treated by manipulation. When the diagnosis is not made until after a number of weeks or months and when the dislocation cannot be reduced by manipulation, open reduction with the use of a semilunar skull is indicated. When the condition has not been diagnosed or operation has been refused or has failed, the semilunar bone should be removed. Davis recommends the following method for open reduction.

An incision is made over the dorsal surface of the wrist, and flexion of the wrist and traction on the hand with countertraction on the arm are employed to increase the space between the bones. A special nickel steel skull curved on the flat surface is then inserted between the closely edged bones so that the distal curve of the skull engages the lip of the semilunar bone and the proximal curve slides over the os magnum.

If reduction cannot be effected by means of the skull, it is advisable to remove the bone by an anterior incision rather than to endeavor to take it out through the usual dorsal incision employed for the open reduction.

Four cases are reported and the article is illustrated with fifteen roentgenograms

S C WOLDENBERG, M D

Dujarier C.: Pseudarthrosis of the Neck of the Femur; Osteoperiosteal Grafting; Cure (Pseudarthrose du col fémoral, greffe ostéo périostéopéenne) *Bull et mem Soc de chir d Par* 9 3 xlv, 354

The case reported was that of a man 23 years of age who fractured the neck of his femur in fall. Four and one-half months after the accident the author resorted to osteoperiosteal grafting because of non-union. The patient was then put to bed without supporting apparatus.

After thirty-eight days he was able to raise his bed, and at the end of three months was able to walk without pain and the clinical and X-ray findings were very satisfactory.

RUDOLPH MARR, M D

Walters: The Result of Suture of an Old Fracture of the Patella Followed by Suture of the Patellar Tendon Thirty Two Years Later (*Résultat d'une suture pour fracture ancienne de la rotule, puis d'une suture du tendon rotulien trent-deux ans après la dernière opération*) *Bull et mem Soc de chir de Par* 9 3, xlv, 93

After treatment in March, 1860, for fracture of the right patella by means of Dupuy's hooks, the patient's knee case is reported experienced pain in walking. After a second fall, when he first consulted the author the knee was stiff, the two patellar fragments were distinctly separated, the upper fragment was immobile and the quadriceps was trophic. At operation the upper fragment was let down by dissection high up on the tendon, the fractured surfaces were freshened, and the fragments were wired together with silver wire. (The author did not begin to use horsehair for bone sutures until 1893.) The leg was immobilized sufficiently for bone union and then given exercise. Ultimately the patient returned to his work of delivering heavy bags of coal.

In March, 1901 he fell from ladder with sack of coal on his shoulder and with his leg doubled under him. After this accident there was extensive infiltration, and distinctly palpable depression was noted between two fragments. At operation the quadriceps tendon was found torn from the patella. Its cup-shaped infiltrated end had suggested an upper fragment. The old fracture showed solid bony union. The silver wire sutures were removed. Following suture of the quadriceps tendon to the patella the patient made complete recovery and

returned to his work. In 1923 after service through the war the functional result was still unimpaired.

Championnière believes that this case is the first direct verification of osseous callus after suture of the patella.

WALTER C. BERRY, M D

Labey G.: Fracture of the Internal Head of the Tibia with Great Displacement; Osteosynthesia Early Walking (Fracture uncondylaire interne du tibia avec gros déplacement ostéosynthèse marche précoce) *Bull et mem Soc de chir de Par* 9 3 xlv, 95

A girl 16 years of age was struck by an automobile and fell upon her right knee sustaining an oblique articular fracture of the right tibial plateau, including the spine, and inward displacement of the fragment and the lower end of the femur. The external condylar head of the femur being wedged in the gap between the articular surfaces of the displaced tibial fragment and the external half of the upper border of the tibia, the outer half of the articular surface of the tibia lost all contact with the femur and appeared to be displaced outward.

Under spinal anesthesia induced with no cocaine a horseshoe shaped incision with its base upward was made and extended laterally from behind the femoral condyles and anteriorly under the tuberosity of the tibia. The patella ligament was laid bare, and the anterior tuberosity detached and lifted up with the tendon to expose the joint. The joint contained clots of blood. The external condyle was disengaged from between the two fragments of the tibia by inclining the knee inward. The fragment consisting of the internal tibial plateau was brought back and retained in position with Lambott clamps and the displacement of the femur was similarly reduced. The fragment was fixed in place by a long screw of wood with a head plate inserted transversely. The anterior tibial tuberosity was reapposed and fixed with 4 nails. The leg was then put up in extension.

The stitches were removed on the eighth day and mobilization and massage were begun on the following day. The patient began to walk on the fifteenth day and on the twenty-eighth day walked without cane and ascended and descended stairs. Extension was complete and flexion was possible almost to a right angle. The postoperative X-ray examination showed perfect restitution of the articular surface of the tibia but slight posterior displacement of the internal tibial plates.

In the author's opinion, open reduction by the transpatellar route of Alig or the trans-tibial route gives the best anatomical and functional reconstruction.

WALTER C. BERRY, M D

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Hilman, F., Morrison, D. M. and Lee-Brown, R. K. Methods of Demonstrating the Circulation in General as Applied to a Study of the Renal Circulation in Particular *J Am Med Ass* 9 3, 1931, 77

The exact reproduction of the vascular system by unproved methods of injection and photography is superior to the best drawings and diagrammatic sketches. Hilman states that the celloidin injection method is best for demonstrating gross detail and the dye method is best to reproduce the minute capillaries. When preservation of the specimen is sought the barium sulphate X-ray study of the circulation is most desirable.

Morrison describes a modification of the Lissakowsky and Huber method of celloidin corrosion. An injection mass composed of celloidin in acetone is used. When this is injected into cavities or blood vessels containing moisture the celloidin is precipitated out and forms a cast, and the latter readily combines with the acetone. The tissue is then macerated so that only the casts of the vessels remain. Solutions are made up of acetone, varying percentages of celloidin (the coarser the vessel to be injected the larger the amount of celloidin) and camphor and placed in stock pressure bottles provided with two holed rubber stopper with glass and rubber connections. Thoroughly dried celloidin (Schering) or washed X-ray films are employed, the latter for coarse vessels. Various dyes are used to color these solutions: cobalt blue, cinabar (red) etc. Alfauin (red) is the best for capillary injections, the finer the vessels to be injected the greater the quantity of dye necessary.

The solution is forced into the vessels by means of an apparatus consisting of a Wolfe bottle with mercury manometer attached to a compressed air tank. Standard pressures are worked out for the injection. The vessels, which must be closed current, are first washed with saline solution. A cannula is connected with the vessel, all air is eliminated from the system and the required pressure is applied in the bottle. For gross specimens the injection is continued for thirty minutes at full pressure and the positive pressure is maintained for twelve to twenty four hours. When large vascular trunks and the finer ramifications are to be injected, a weak celloidin solution is injected first for about five minutes and then a heavier solution is used. Capillary injection specimens must set for from one to three hours, and coarser preparations for from twelve to twenty four hours. Corrosion or digestion of the surrounding tissues is accomplished by immersing the specimen in 0.3 to 0.5 per cent hydro-

chloric acid for three or four days or 75 per cent hydrochloric acid for from twelve to twenty eight hours. The macerated tissues are removed with a fine stream of water. The specimens are mounted in water, formaldehyde, and glycerine under airtight glasses on plate glass or in rectangular jars.

On the basis of specimens similarly prepared, except that they are kept in a water bath at body temperature during the irrigation of fine injections are to be done. Lee-Brown describes the roentgenological study of renal and other vessels injected with substances impervious to the X-ray. The completeness of the injection depends upon the viscosity of the injecting fluid, the nature of the specimen, and the pressure. Lower pressure is required for veins than for arteries. If the roentgenogram is to be made immediately after the injection, an aqueous solution of barium sulphate may be used for fine injections. If immediate roentgenography is impossible or larger vessels are to be demonstrated a thin suspension of barium sulphate in 50 per cent aqueous solution of sodium bromide is used. For repeated roentgenograms, gelatin kept at above body temperature is used instead of water.

For the demonstration of capillary distribution aqueous solutions seem to be superior to gelatin solutions. An aqueous solution of Berlin blue is best as it allows complete injection, causes no distortion, and is simple to prepare, chemically inert, and not affected by reagents used subsequently.

Loew S F, Ott, M D

Stincer, L. Anomalies of the Obturator Artery and Their Surgical Importance (Las anomalías de la arteria obturatriz y su importancia quirúrgica) *Rev de med y ciruj de la Habana*, 9 3 1931, 58

The author calls attention to an anomaly of origin of the obturator artery, which he does not find described in the textbooks. The obturator artery may arise from the external iliac, the epigastric or very rarely from the femoral artery either directly or from a trunk common to the epigastric.

The anomaly observed by the author was a very thick and tortuous obturator artery arising from the femoral artery. From its origin it was directed upward and inward, crossed the femoral vein, and passed through the crural ring to the pelvis thence, after curving several times and without joining any other vessel, it passed toward the subpubic conduit and became distributed in the usual way. This anomaly was unilateral and occurred in a male.

The possibility of arterial anomalies should always be borne in mind. The anomaly described may compress the femoral vein and by obstructing the return circulation cause edema in the lower limb.

W A BENDER

Finsen, A. The Use of Physiotherapy in Intermittent Claudication (Die Anwendung der Physiotherapie bei Claudicatio intermittens) *Wissenschafts-lyde*, 9

The author divides his cases of intermittent claudication into two groups, those in which the lumping is due to arteriosclerosis alone and those in which it is due to arteriosclerosis and neuritis. The cases of the first group he treats by diathermy applied locally and over the heart and by d'Arsonvalisation and hot air baths. In those of the second group he employs galvanisation in the four cell bath in addition.

In all of four cases reported there was very marked improvement in the patient's condition, and in some of them the lumping disappeared entirely.

VON HOUT (2)

BLOOD AND TRANSFUSION

Berfield E., and Schinz, H. R. Blood and Serum Examinations Immediately Before and After Röntgen Irradiation (Blut und Serumuntersuchungen unmittelbar vor und nach Röntgenbestrahlung) *Strahlentherapie* 9 3 xv 84

Studies of the influence of the X-ray on the blood which have been made to date have been directed primarily toward the changes in the morphologic blood picture. The decrease in the number of leucocytes after an initial leucocytosis which is probably merely a pseudoleucocytosis, a dispersal leucocytosis, is caused, not by the destruction of the leucocytes circulating in the blood, but by raying of the blood forming organs, and the destruction of lymphoblasts, myeloblasts, and immature polynuclears. The erythrocytes circulating in the blood are equally insensitive to the X-ray.

The authors' investigations were directed first toward measuring the absorption in the blood. No differences in absorption were found between distilled water Ringer solution, and blood. Therefore with equal layers on the water phantom the depth doses could be read directly and compared with those in samples of blood and serum. Viscosity determinations showed that immediately after deep raying the viscosity and the albumin content of the serum are diminished. Raying did not cause marked acceleration of coagulation.

HARVEY (2)

Giffin, H. Z., and Holloway, J. K. Haemorrhagic Purpura. *Med Clin N Am* 9 3 4

It is pointed out that usually normal coagulation time a prolonged bleeding time and an intrinsic clot associated with marked decrease in the blood platelets are characteristic of haemorrhagic purpura, and that it is necessary carefully to distinguish this condition from hemophilia as ordinarily the former is amenable to surgical measures.

The reduced platelet count (thrombopenia) is apparently the characteristic but unexplained feature of haemorrhagic purpura since severe bleeding apparently does not occur until the platelet

count is below 60,000 for each cubic millimeter. Theoretically the reduction in the platelets is the result of rapid destruction, and not of decreased production. There is reason to believe that the process is toxic, due primarily to some infection, that the toxin which acts on the blood and perhaps also on the vessels is instead of the original organism, a secondary product, an abortive substance designed originally to protect. Splenectomy has been performed in the belief that the production of this toxin is essentially the function of the hemolymph system of which the spleen is the major element. In several severe cases the results have been excellent.

Elimination of foci of infection in the minor and transitory cases is advised. Transfusions are usually necessary and effective in improving the anemias. A case report and tabulation illustrate the utility of therapeutic measures in severe cases. However in selected cases splenectomy in conjunction with transfusions before and after operation appears to be a life saving procedure. One patient mentioned is in excellent health three months after this operation.

J. K. HOLLOWAY, M.D.

Marañón. Haemorrhagic Complications Following the Use of Bismuth Salts (Accidentes hemorrágicos en enfermos tratados por las sales de bismuto). *Arch de med exp y especial* 9 3, 21, an de la acad med-quirurg españ 370

Marañón reports three cases of severe hemorrhage occurring in patients treated with bismuth salts. He concludes that in the cases of persons with a tendency to bleed, the use of these salts should be avoided entirely or they should be employed with great caution.

W. A. B. 27

Peterson, M. F., and Mills, C. A. A New Method for Accurately Determining the Clotting Time of the Blood. *Arch Int Med* 9 3, xxxix, 88

The method described is based on the fact that when clotting first begins the blood ceases to flow back and forth in the capillary tube. Capillary tubes with an inside diameter of from 0.6 to 0.8 mm. are drawn from clean glass tubing and cut into about 10 lengths. The blood is obtained from a stab wound of the finger or ear after the first drop has been wiped off. The tube is touched to the second drop and the blood allowed to flow in by capillary attraction, about 34 mm. of the tube being left unfilled. The time is counted from the appearance of the second drop over the wound. Slight pressure to cause the drop to form rapidly is permissible provided it is applied at little distance from the wound.

After the tube has been filled, it is placed in one of the creases of the palm and completely covered by closing the hand. This gives uniform temperature somewhat below that of the body (about 35 degrees C.) and obviates the necessity for a water bath or chamber of any sort. By simply opening the hand slightly for observation when inserting the tube one may note the end point without changing

the temperature or disturbing the tube. The tube should be gently inverted every thirty seconds, the time when the column ceases to move being noted. Jarring and shaking tend to prolong the clotting time and should therefore be avoided.

MORRIS H. KAND, M.D.

Guthrie, C. G., and Hock, J. G. On the Existence of More Than Four Isosagittal Rhin Groups in Human Blood. *Bull Johns Hpt as Hist Nat* 913, XXX 38 50, 28

This interesting and important study of the reactions between the bloods of different persons as begun in connection with the study of the blood of a patient (C. T.) with sickle cell anemia concerning the type of whose blood there was some doubt.

When the patient's red cells were matched with fresh serum from Groups II and III, they were agglutinated by the first and not by the second, indicating that she belonged to Group III. However when her serum was matched with Group II cells, and her cells with Group II serum, there was no agglutination in the first instance indicating that she belonged to Group I.

Repeated tests of the patient's blood with known members of the four groups showed that her serum acted as the serum of Group I. It did not agglutinate the cells of any of the other groups, but that her cells behaved as those in Group III. It was agglutinated by the serum of Groups II and IV. Cross-agglutination tests with the blood of fifty-nine different persons during a period of three months gave similar results.

It was found further that the blood of the patient's brother, married sister and one of the married sister's four children acted like the patient's blood. In other words, four persons belonging to the same family were found whose red cells acted like those of persons belonging to Group III and whose serum acted like that of persons of Group I.

Although the patient's serum repeatedly failed to agglutinate the cells of members of Group II patient (D. J.) considered as a typical member of Group II was eventually found whose red cells were agglutinated by C. T. serum, not only once, but repeatedly over a period of six months. Further, among 43 hospital patients thirteen were found whose blood acted like that of members of Group II except that their red cells, like those of D. J. were agglutinated by C. T. serum.

The blood formulae of the four groups and the formulae of the blood of the patient (C. T.) are shown in Table I.

TABLE I—BLOOD FORMULAE OF THE FOUR GROUPS ACCORDING TO LANDSTEINER ET AL.

	Agglutinated in serum	Agglutinated in red cells
Group I	O	A
Group II	A	B
Group III	B	AB
Group IV	AB	O

Absorption experiments were then carried out as follows.

Washed red cells were added to different blood sera in order to absorb the agglutinins present. After 10 hours the specimens were centrifuged and fresh, washed red cells added to the clear sera in order to determine whether any agglutinins were left. Table II illustrates the nature of these experiments.

TABLE II—PROTOCOL OF EXPERIMENT 12

Tube No.	Serum	Absorbed with red blood cells	Subsequent agglutination with red cells				Result
36	Group I (D)	Group I (D)	Group I (D)	Group II (H)	Group III (D, J)	Group IV (L, K)	+
37	Group I (D)	Group II (H)					+
38	Group I (D)	Group III (D, J)					+
39	Group I (D)	Group IV (L, K)					+
40	Group I (D)	Group I (D)					+

From such absorption experiments the authors conclude that there are at least three different agglutinins in human blood sera and three agglutinogens in human red cells instead of two agglutinins and two agglutinogens as has been believed heretofore. They show that in such number of agglutinins and agglutinogens there are sixty-four possible combinations of which only seven may be regarded as biological possibilities. Of these twenty-seven possibilities they have found eight in the course of the present study as follows:

Agglutinins in serum	Agglutinogens in red cells
Group I serum	O
Group II (D) and others	A
Group III	B
Group IV	AB
C. T. and many	O

The authors believe that some of the remaining six or seven exist as well and suggest that the apparent discrepancies and abnormal behavior of certain bloods reported by Jansky, Ottenberg, Brem, Hooker, Anderson and others may be explained by the facts they have brought to light.

They suggest that some of the reactions observed following transfusion from donor to recipient supposedly of the same group may be due to failure to assign one or the other to the correct group because of the inherent limitations of the method now in general use for grouping unknown bloods.

From a practical standpoint the authors emphasize the importance of using fresh serum and cells in making the tests for blood grouping, rather than stock sera which may rapidly lose their agglutinative

power and outline a method of determining the exact blood formula of prospective donors. The method suggested involves a considerable amount of careful laboratory work, but its importance must be admitted in view of the facts disclosed by the investigation here reported. *Source: L. Koci, M.D.*

Gilks, H. Z., and Haines, S. F.: A Review of Professional Donors. *J Am Med Ass* 9 3 1932, 53

A group of professional blood donors were studied in order to determine whether or not they were being permanently injured by repeated bleedings. They had made from one to thirty-five donations, usually of 500 c.c. each. In the males no significant changes were found in the hemoglobin, the erythrocyte or leucocyte counts, or the reticulated and differential white cell counts. Many of the females had moderate secondary anemia in some cases the same as out of proportion to the amount of blood withdrawn. Many donors felt better after the donations than before and a gain in weight was a common occurrence (50 per cent of the series).

Blood volume studies made in the cases of five donors who had been used frequently showed no significant changes in the plasma and cell volumes. Seven donors with hypertension showed no permanent changes in the blood pressure. A slight increase in the blood pressure was a common finding in those who had had a normal blood pressure before they gave blood. Before donation, a history and complete physical examination are obtained and an inquiry is made into the social habits of the donor in all cases. Complete blood examinations and Wassermann tests are made frequently. *S. F. Haines, M.D.*

Lacey, F. W.: A Citrate Method of Blood Transfusion Developed to Minimize Post Transfusion Reactions. *Cleveland Med Ass J* 9 3 1930, 580

Dissatisfaction with the citrate method of transfusion has resulted largely from the reactions that may follow its use. These have been attributed to the manipulation of the blood which brings it into contact with foreign bodies, agitation which cools it and its exposure to bacterial contamination. Lacey describes an apparatus designed to eliminate these disadvantages which consists essentially of two liter bottles—one to serve as original receptacle and container of 10 per cent citrated blood and the other used for physiological saline solution—connected by a Y-shaped glass tube with three glass stop-cocks. By manipulating the stop-cock the contents of Bottle A or B can be drawn into the syringe by adjusting artery clamps controlling the flow and then, by turning the stop-cock, the contents of the syringe may be passed through the needle to the recipient. The blood and saline solutions are kept at body temperature by placing the bottles in a basin of warm water.

The results obtained by the use of this apparatus indicate that post-transfusion reaction can be largely prevented by eliminating errors in technique.

William A. Hironaka, M.D.

Carrington, G. L., and Lee, W. E.: Fatal Anaphylaxis Following Blood Transfusion. *Arch Surg* 5 12 9 3 1932, 1032

In recent years blood transfusion has become an exceedingly important therapeutic measure. Reactions arising in severity occur after all methods of transfusion in general use at the present time. Whether they are more frequent and severe after the citrate method than after the transfusion of whole blood is still under discussion.

Explanation of the reactions following transfusion are unsatisfactory. Factors of importance are:

1. Too rapid introduction of the blood, which may embarrass the circulation.

The use of new rubber tubing. The effect of such tubing may be prevented by soaking it in normal sodium hydroxide solution for six hours.

3. Incompatibility between the blood of the donor and the recipient. Under such circumstances the donor's corpuscles are hemolyzed by the recipient serum or the recipient corpuscles are hemolyzed by the donor's serum or the corpuscles of each are hemolyzed by the serum of the other. Hemolysis is preceded by agglutination and the latter is the more rapidly fatal of the two. A donor may be compatible for one transfusion and incompatible for one given subsequently.

In the opinion of Lewisohn, Drinker and Keynes the citrate method is as satisfactory as any.

The authors report a case of fatal anaphylactic shock occurring one hour after a first transfusion of 500 c.c. of blood by the citrate method in a case of primary anemia. The blood of the donor was carefully typed and cross-agglutinated with that of the recipient and there was no apparent defect in the technique. After the reaction had progressed for several hours a specimen of venous blood showed no evidence of hemolysis or agglutination, the urine presented no evidence of hemoglobin, and there was nothing to indicate infarction in any locality. There was no history of asthma or any other type of protein sensitization either donor or recipient. The case appeared to be one of true cutaneous anaphylaxis. *Charles J. Glaser, M.D.*

Pentfield, W. G., and Teplicky, D.: Prolonged Intravenous Infusion and the Clinical Determination of Venous Pressure. *Arch Surg* 5 12 9 3 1932, 1033

The authors have devised an apparatus for the prolonged intravenous administration of infusions in cases in which it is necessary to force fluids. This apparatus particularly is useful in the treatment of patients who are unable to take large quantities of fluid either by mouth or by rectum. The rate of flow and the temperature of the solution are controlled, and provision is made for the frequent determination of the venous pressure.

For the continuous infusion the authors recommend physiological salt solution or less than 10 per cent glucose solution. These should be prepared daily with fresh distilled water and should be used

within the forty-four hours. Great care should be taken in the sterilization of all apparatus and utensils employed as well as of the solution, in order that there may be no reaction. The tubing must be carefully handled as it is one of the most frequent causes of reaction. In at least ten of the authors' cases

with severe reaction the use of new tubing not properly prepared was largely responsible. Three factors in the reaction are: (1) the temperature of the infusion fluid, (2) the hydrogen ion concentration of the solution, and (3) the introduction of foreign substance into the blood. A number of experiments have shown, however, that the temperature and hydrogen ion concentration of the infusion solution vary considerably without ill effect.

The infusion may be given from two to four hours without tiring the patient. In the authors' cases the rate of flow was from 800 to 500 c.c. per hour. As much as 4,500 c.c. has been given by this method in three or four hours. The venous pressure is considered the best index of the patient's condition and the effects of the infusion. A rising pressure is a sign of unfavorable reaction. The venous pressure is determined at the beginning of the infusion, at the end of the first and second half hours, and then every hour as long as the infusion is continued. In the majority of cases it remains practically unchanged, but in shock occasionally falls.

In cases with marked dehydration the administration of large quantities of physiological salt solution or Ringer's solution by this method is of great value. Glucose solution is not so satisfactory on account of its diuretic action. Woodyatt has shown that in the cases of normal persons 0.35 gm. of glucose per hour for each kilogram of weight can be given intravenously without the appearance of glucose in the urine. Anything above this amount will cause glycosuria. In the administration of glucose infusion the output of urine usually reaches its maximum during the fourth hour.

HAROLD M. CAMP, M.D.

LYMPH VESSELS AND GLANDS

Mahon, G. D. Elephantiasis. A Clinical Review and an Attempt at Experimental Reproduction. *Am. J. M. Sc.* 1923, div. 8:75.

Elephantiasis is characterized by hypertrophy of the skin and subcutaneous tissues, with vascular disturbances and resulting exudate. Bacterial cultures have been positive during the recurring, active cutaneous reactions, but in a few cases there are no local inflammatory manifestations.

Block of the lymphatics by filaria, with subsequent oedema, does not explain the hypertrophy of the connective tissue so characteristic of elephantiasis.

The disease begins following lymphangitis, cellulitis, dermatitis, or some other local manifestation of local infection, but sometimes its onset is insidious.

The disease is universal in distribution, but is epidemic only in tropical and subtropical regions.

The author studied thirty-three cases in the Mayo Clinic. The youngest patient was 12 years of age and the oldest 55. In pathologic study it was noted that in cases of unknown onset without local reactions there was well marked lymphocytic infiltration in the deeper layers and the aponeurosis showed greater thickening with more change in the blood vessels of the deeper tissues than in the chorion. It is therefore concluded that in many cases of elephantiasis the inflammatory reaction necessary to produce cell proliferation is caused by low grade organisms confined to the subcutaneous tissue and of insufficient virulence to produce local or constitutional reactions.

The experimental production of elephantiasis by dissecting out the lymphatics of the groin, ligating the femoral veins, and injecting organisms obtained from two cases of elephantiasis, as attempted in twenty animals, but the results were negative.

A. C. JOHNSON, M.D.

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE POSTOPERATIVE TREATMENT

Gernez, M. L.: Autoplasties with the Use of Skin Flaps with Long Pedicles (Autoplasties par lambeaux cutanés à longs pédicules) *Bull et mem Soc de chir d'Par* 9 3 xlv, 4.

In extensive skin defects in which Thiersch grafts are unsuitable and skin sliding is impossible, large flaps may be cut at a distance, turned back over the defect, and subsequently replaced in its original position after utilization of the terminal portion as described by Moore.

The author reports the use of this method in the case of a soldier with a triangular shaped loss of skin over the Achilles tendon 7 cm wide at the base and 7 cm high, which was caused by a shell fragment. The callous ulcer had been present for six months and had prevented the wearing of a shoe. At operation the edge of the ulcer was trimmed to the healthy skin margin. A cutaneous flap with its pedicle over the lower tibia, which was cut by going up on the posterior surface of the leg to the popliteal space, was turned backward, and accurately sutured to the healthy skin edge of the ulcer over the Achilles tendon. Under the pedicle a compress was placed. The upper part of the wound on the calf from which the graft was lifted was sutured together by undermining and sliding the skin. The lower part was left open and treated daily with camphorated ether solution. On the twentieth day the end of the graft was divided and the remainder of the flap sutured back into its original bed. Three months later the leg was healed. The transplanted skin was soft and glided over the Achilles tendon. The scar was painless and the patient was able to wear low or high shoes.

WALTER C. BRYANT, M.D.

Kronmayer: The Combined Physico-Surgical Treatment of Keloid (Die kombiniert chirurgisch-physikalische Behandlung der Keloiden). *Deutsche med Wochenschr* 9 3 xlix, 30.

The problem of the removal of large keloids will be solved when it is possible to remove them locally so that healing will take place by first intention without the formation of granulations. This goal can be approached by subepidermal excision of the keloid tissue. With the cylinder knife which Kronmayer introduced for minor dermatological surgery, multiple punches are made through the entire thickness of the keloid down to the subcutaneous fatty tissue and the punched out cylinder of skin is packed up with the forceps and cut free from the subcutaneous tissue with the scissors. The diameter of the cylinder knives is at the most from 2 to 5 cm, and the punch holes are made at

distance of from 2 to 4 cm. The keloid is riddled like a sieve. With a small knife or scissors the remaining keloid tissue is then excised from the punch-holes subepidermally and without further damage to the epidermis. The epidermis which is riddled but still retains its continuity lies like a Thiersch flap upon the subcutaneous tissue. Healing is complete in six to eight days with scab formation but without granulations.

A few days after the occurrence of healing keloid tissue begins to form again and must be checked by the application of physical remedies to the young scar tissue while it is still unresistant. Later the blue light of the quartz lamp is applied. To obtain a strong inflammatory reaction which restrains the formation of keloid, fifteen minute exposure is sufficient. The quartz light is preferable to radium and the roentgen rays because its effect begins one day after the exposure. About eight days after the disappearance of the inflammation due to the light, deep radium or roentgen ray irradiation is applied. Usually radium is employed. The dose is regulated to produce a mild erythema. Because of the previous light inflammation, the tissues are sensitized and the dose necessary to produce an erythema is somewhat smaller than usual. As a rule one treatment with light and radium is sufficient to remove definitely the tendency toward keloid formation. Only in cases of spontaneous or true keloid is it necessary to consider the possibility of a recurrence in making the prognosis.

WOERTMANN, (Z)

Wohlgenuth, K.: Postoperative Tetanus. A Contribution to the Casuistics of Congenital Mesenteric Defects and Extensive Resections of the Small Intestine (Ueber Tetanus nach Operationen Gleichzeitiger ein Beitrag zur Kasuistik der angeborenen Mesenterialdefekten und der ausgedehnten Duodenalresektionen). *Arch f H Chir* 9 3 cxvii, 409.

The author reports three cases of fatal postoperative tetanus. In the first resection of 80 cm of the small intestine was done because of strangulation ileus. The tetanus developed on the fourth day. Autopsy showed defective suturing and peritonitis. Cultures of the bacillus and animal experiments were positive.

In the second case resection of the intestine was done because of intussusception. Tetanus developed on the twelfth day. Peritonitis was not found at autopsy and cultures were negative.

In the third case operation was performed for acute appendicitis in the early stages. Tetanus developed ten days after the patient discharge from the hospital and was quickly fatal. No bacteriological cultures were made.

As postoperative tetanus occurs only after abdominal operations, the infection evidently has its origin in the intestine. The author therefore recommends prophylactic injections of antitoxin after every operation in which the intestine is injured or opened.

VON DERBROCK (2)

Klug, W. J.: Is Digiparatum Prophylactic Agent Against Postoperative Pulmonary Complications (Digiparat als Prophylaxe gegen postoperative Lungenkomplikationen). *Deutsch. Zeitsch. f. Chir.* 93, clivul, 30.

In cases in which Klug administered 3 ccm of digiparatum intramuscularly as routine postoperative measure he found that the incidence of pulmonary complications after local and general anesthesia remained unchanged. He was unable to determine that the digiparatum was effective as prophylactic agent, but demonstrated clearly that it had a decided beneficial action after the development of postoperative pulmonary complications.

BANDER (2)

ANTISEPTIC SURGERY TREATMENT OF WOUNDS AND INFECTIONS

Underhill, F. P., Carrington, G. L., Kapetnow, R. and Pack, G. T., and Others: Blood Concentration Changes in Extensive Superficial Burns and Their Significance for Systemic Treatment. *Arch. Int. Med.* 933, xxxix, 3.

In extensive superficial burns rapid concentration of the blood is usually associated with the outpouring of fluid onto the affected area or with increasing edema of the part. When the concentration of the blood remains at 15 per cent of the normal for any length of time life is endangered.

The authors' study was made on twenty-one persons who were victims of theater fire. The concentration of the blood was estimated by determining the hemoglobin content by the method of Cohen and Smith. For convenience, the patients were divided into two groups, the moderately and the severely burned. It was apparent at once that the severely burned responded with a higher concentration of blood than the other group. The percentage increase in values in indicating the patient's condition and the response to treatment. A chart prepared by the authors shows that there was a marked drop in the blood concentration associated with an increase in the urinary output in direct relation to the amount of fluid given. In these cases fluids were given by mouth, by rectum, subcutaneously, and intravenously as indicated.

The determination of the composition of the blood did not reveal any increase in the non-protein nitrogen such as might be expected because of the absorption of toxic material from the injured area, but in cases of high concentration of the blood there was a decrease in the sodium chloride content.

In extensive superficial burns a lowered systolic blood pressure was usually encountered. This may be symptom of impending shock. When the pulse pressure is lowered the increased concentration of the blood interferes with the circulatory mechanism, though it may not be responsible for the lowered pulse pressure. In some of the cases with highly concentrated blood the pulse pressure was medium, while in others it was normal.

Changes in temperature depend for the most part upon the efficiency of the circulation rather than the blood concentration, but there is a marked association between blood concentration and the initial rise in temperature. In all cases of extensive superficial burns the forcing of fluids is necessary to restore the normal concentration of the blood as far as possible. There is then marked evidence of improvement, and such clinical manifestations as delirium, coma, hemoglobinuria, gastric intestinal disturbances, etc. are checked.

WILLIAM J. PICKETT, M.D.

Chudovsky, M.: The Treatment of Tetanus (Die Behandlung der Tetanuserkrankung). *Oswest. Med. J.* 3, lixvi, 3.

The author reports on 102 cases of tetanus which were treated during a period of fourteen years. The symptoms of tetanus appeared in from one to seven days after the injury in sixty-four cases, in from seven to fourteen days in thirty cases, and in from fourteen to twenty-seven days in eight cases. Of the first group of patients twenty-four died and twenty recovered. Of the second group, four died and twenty-six recovered. Of the third group, two died and six recovered.

During the World War the mortality in cases of tetanus was increased because of the complications associated with the severe injuries. In twenty-four war-injury cases the affected extremity was amputated. The histories reveal severe generalized tuberculosis, renal affections, necrosis of bone, strychnine coma, and intestinal affections which rendered the prognosis more unfavorable. In fifty of the cases reviewed the tetanus had been present for from two to nine days. Six of these were fatal cases in the second and third groups.

The treatment consisted of lumbar puncture and the injection of 1 first 30 and later 100 units of antitetanic serum into the lumbar sac. This was repeated daily until the difficulty in swallowing became less. As a rule particularly favorable effect

was observed within the first twenty-four hours. After the intraspinal injections a smaller dose was injected into the subcutaneous tissues. The symptomatic treatment consisted of injections of pilocarpine morphine solution () every six to eight hours. Cardiac stimulants were given in accordance with the heart findings. Later lukewarm bath and bromides were substituted for the pilocarpine-morphine solution.

VON LORRAVIER (2)

PHYSICO-CHEMICAL METHODS IN SURGERY

MISCELLANEOUS

Mayo, R. J. A Question of Size 1 571 93
Irradi, 140

[This article is reproduced in its original form because of its importance and the difficulty of presenting it adequately in an abridged form.—Editor]

When Brown the English botanist began the observation on physics which culminated in his written communications of 1827 he focused attention on a subject of enormous importance. The questions he raised a century ago are today perhaps the most important of all those before the scientific world. Brown noted, as man undoubtedly had noted from time immemorial, that when pencil of bright light was thrown into a dark room, there were to be seen in the air certain rapidly moving particles of which there was no other physical evidence. On experimentation he found these dancing motes under conditions in which freedom from air disturbance of any kind had been obtained, and he further noted with the microscope the continual movement among minute particles suspended in liquid. Because of his investigations the peculiar vibratory motions of these particles were called brownian movements. The great physicist, Dalton, as at this period working on the atomic theory and the constitution of the molecule and in connection with his investigations the so-called brownian movements were even more happily designated the dance of the molecules. The most important contribution to proper understanding of these phenomena was that of Thomas Graham Master of the Mint in London, who in 1863 published his painstaking observations which led to the first great description of colloid bodies. Graham's work was based largely on dialyses of colloid sized substances through parchment paper. Tyndall called attention to the curious phenomenon occurring in the track of a luminous beam (called the Tyndall phenomenon) the colorings of which are the effect of sunlight on colloids in the air and investigated the transparency and opacity of gases and vapors under radiant heat.

To those who have given little thought to the term colloid, especially as it is used in medicine, the word appears to have some special meaning over and beyond that of size, but as a matter of fact, colloid refers only to size. Dividing matter into three great groups, there are first, those objects which can be seen directly with the eye or with the eye aided by the microscope. The best microscope has magnification which will reveal objects $\frac{1}{10}$ micron in diameter. Second, the other extreme there are the atom, the molecule, and the electron which cannot

be seen. Third, those particles of matter lying between the two extremes in size ($\frac{1}{10}$ micron or $\frac{1}{100}$, 000 inch, and $\frac{1}{1000}$ micron or $\frac{1}{35,000,000}$ inch) are called colloids. In this third or colloid group the particles are too small to be seen directly but the colloid sized particles are large enough to scatter a ray of light and therefore refract the light ray. The atom the molecule and the electron are too small to scatter the light ray and therefore do not refract it although under experimental X ray conditions the nucleus of the atom was demonstrated by Thompson and Ashton. Definite relationships can be shown as evidenced in 1913 by the remarkable work of Henry Moseley, young Englishman, whose death in the Gallipoli campaign was one of the irreparable losses of the Great War. Moseley analyzed the atom by the reflection of roentgen rays and showed that there are ninety-two possible elements between hydrogen, the lightest and uranium the heaviest, all but four of which are now known.

The ultramicroscope which is used to catch the reflection of the colloid bodies gives no idea of the shape or the composition of the object itself but by serving as a mirror and reflecting the light shows that such a body is actually present. The shortest ray of electro magnetic vibration is the gamma ray from radium $\frac{1}{1000,000,000}$ inch. The next is the X ray which is about $\frac{1}{100,000,000}$ inch. It was with this extremely short X ray that Moseley did his work. The wavelength of the X ray which in this connection amounts to the same thing as size is $\frac{1}{50,000}$ as great as the yellow light ray from the sun, and it is to this property that the X-ray owes its great penetrating power. The shortest light ray visible to the eye is approximately $\frac{1}{30,000}$ inch in length. The longest, as Bertalan, are the so-called ureleins, which are from one-half mile to four or five miles in length, and experimentally have reached the length of 100 miles or more.

A most remarkable fact is that colloids, atoms, molecules, and electrons are not greatly affected by gravity and remain in rapid motion more or less permanently suspended in their medium, although all are affected by pressure, temperature and atmospheric conditions. The evaporation of water is an illustration of this property. Water exists in the atmosphere but under certain conditions does not greatly feel the pull of gravity. Under specific atmospheric conditions, however, as when the evaporated water rises to a height where the air is rarified and by greater coldness than exists at the point of evaporation, it gathers together in colloid form as clouds. For rainfall of $\frac{1}{16}$ inches to a acre, 144 tons of colloid water practically unresponsive to the pull of gravity are suspended over each acre. If the

change from a dispersed to a fluid state takes place rapidly the electrical energy on the surface of the colloidal particles is given off as an electrical disturbance, thunder and lightning.

Gortner and his pupils may influence the feeding of the world by their discoveries of the importance to plants of water in a bound form, and their demonstration that the effect of freezing and dryness on plant life depends on whether the water contained by the plant existed in a free form or a bound form. The difficulties which stood in the way of finding food plants which would withstand winter killing were enormous. Years of patient waiting were often necessary before weather conditions made the demonstrations possible. When Gortner conceived the idea that water might exist in a bound state uninfluenced by ordinary conditions, tropospheric or thermic, he found that if plants which were not winter-killed were pressed in a hydraulic press, little or no juice was obtained and that the amount of juice that could be expressed was directly related to the ability of the plant to withstand frost. He found that those plants which were not winter-killed contained little unbound water, that is, water in a free form, while those that were destroyed by freezing contained relatively large amount of free water. Carrying his experiments out in the desert, he found conditions comparable as to drought plants that could withstand dryness contained water as did other plants, but in a bound form. Experiments in the compression of water which is one of the most incompressible of all substances, have shown that the water in a film on colloid surfaces can be compressed to 75 per cent of its volume and that under such conditions it behaves as a solid and does not evaporate at 300 degrees C in a complete vacuum.

We know that substance in solution, common salt for instance, exists although it can no longer be seen when the water is evaporated the salt is again in evidence. If a pencil of light is thrown through such a solution it will not be diffused, showing that the light rays have not met bodies in the solution which are larger than the ray of light, and consequently the light is not reflected. It was Arrhenius, the Swedish scientist, who defined the electrolytic theory of solutions, asserting that salts separate in water into positive and negative parts, and that such solutions are ionic. An ion is an unsatisfied electric charge. A chemical reaction is always accompanied by an exchange of electric charges between elements. The ion carries a definite charge and moves with the electric current. Colloids, atoms, and molecules may give off electrical energy under certain conditions.

One may well ask, where does the energy contained in the atoms, molecules, and colloid reside. The Nobel prize in physics for 1922 was given Dr Niels Bohr of Copenhagen who about ten years ago, revealed his conception of the atomic system as solar system in which the sun is represented by nucleus of positive electricity and the planets by rapidly revolving negative electrons, and on this

theory calculated the wave lengths of light in each line of the spectrum. The positive core of the atom is exceedingly dense and heavy compared with the electron, in which the activity of negative electricity resides. The positive core might be said to be the electric center of gravity toward which the negative electrons constantly are pulled. Knowledge of electrical energy is based largely on an understanding of the negative electron which is $1/1800$ the density or weight of the positive hydrogen nucleus which is the smallest and lightest of known atoms of matter. It is because of its extremely small size and weight that the negative electron can move with such extraordinary rapidity through solid substances, especially copper and other electrical conductors.

The force that exists in the atom and molecule is inconceivable. Rutherford, the great physicist, says that he looks forward to the day in which energy for all our uses will be atomic. One of the scientists associated with the General Electric Company says that there is sufficient energy in a teaspoonful of water to drive the largest battleship across the ocean. The electric power in the molecule depends on the mass of the nucleus, that is, the number of positive charges in the mass and the number of negative electrons circulating around the positive nucleus, the charges in the more stable compounds going up in an arithmetical progression of four, the octet being the most stable.

Most of the biochemical reactions in the body depend on physical states. Krogh, whose experimental studies of the blood capillaries won for him the Nobel prize in physiology in 1920, has added greatly to our knowledge of the mechanism of body nutrition. It had been believed that the capillaries were endothelial channels in the tissues, but Krogh has confirmed the observation that even the finest capillaries contain smooth muscle fibers through the walls of which oxygen and crystalloids, such as glucose, salts, and the amino acids, supply the body cells by diffusion. Diffusion depends on pressure.

Crystalloids are in a molecular state and penetrate the capillary walls everywhere because the pressure is greater within the arterial capillary than in the tissue space and greater in the tissue spaces than in the venous capillary which receives the waste products of oxidation. Unless there is great dilatation of the capillaries which increases their permeability to larger bodies the colloids normally do not penetrate the capillary walls except in the liver and gastro-intestinal tract. Histamin dilates the capillary walls so that its interspaces permit the escape of larger-sized particles such as colloids, and as in shock, the experimental animal bleeds to death in its own tissues. The colloids of the blood are of different sizes hence there is variation in the permeability of the capillary wall to different colloids. The osmotic pressure, the state of dilatation of capillaries, and the size of the colloid molecule are the controlling factors. Increased work of any organ of the body causes dilatation of the capil-

lines. This power of dilatation and contraction lies in the non-striated muscle coat of the capillary. Variations in caliber of the capillaries may be brought about by the many influences which affect life processes and are to a great extent independent of nerve control. For instance the effect of cold on the skin is to produce contraction of the arterial capillaries, resulting in blanching, which is followed by vasodilation due to dilatation and stasis of the venous capillaries distended with non-oxygenated blood. One can conceive that many substances said to be poisonous are poisonous because of their physical condition: certain tissue filters may become plugged by particles which of themselves are not poisonous in the chemical sense, but are attracted to certain localities and plug the normal inter-spaces, suspending internal respiration.

The point should be emphasized that, normally, the blood capillaries pick up only molecular substances or extremely fine subdivisions soluble in water. Generally speaking, it is the function of the lymphatics as absorbents to pick up material substances insoluble in water, such as bacteria, protozoa, and the cancer cell, which are too large to enter the blood capillaries. This absorption is through the agency of phagocytes which by diapedesis reach the lymphatics. The reaction in the lymph nodes represents the struggle of the gland to detoxicate these pathologic agents. The lymphatic channels lead from one gland to another but in each gland they break up into lymphatic capillaries varying from micron to micron and into endothelium-lined pockets and sinusoids before they are gathered again into the larger lymphatic channels for onward movement. These physical facts are of the greatest importance in relation to the infections which spread by way of the lymphatic system, such as tuberculous, syphilis, and cancer.

Bacteria are electronegative, but the bacterial spore carries positive charge. Evidence goes to show that endothelial cells which are phagocytes are electropositive. This research is incomplete, however, as an entire series of cells has not been worked out.

An idea of the minuteness of the constituents of a cell is gained from the following estimated analysis. A cell is composed of (1) protein, which is always colloid, (2) carbohydrates, which may be either crystalline or colloid, (3) lipoids or fats, which are either colloids or emulsions, (4) salts, which are crystalline, and (5) water, some part of which, large or small, depending on the physiological state of the cell, may be in colloidal form. As a specific instance the composition of a liver cell, expressed in molecules, is estimated to be: protein, 55,000,000,000; fats and lipoids, 166,000,000,000; salts and other crystalloids, 5,000,000,000,000; and water, 5,000,000,000,000.

Perkin, working in the Royal College of London discovered the dyes which Hofmann took back to Germany and which were the basic discoveries that gave rise to the explosives exploited in the World War. Abel and Rowntree in 1900, and Rowntree

and Geraghty in 1900, in working on the elimination of aniline dyes from the kidney were led to the discovery of phenolsulphocephthalein as an index to renal function. Evans has shown that dye elimination is purely a question of physics, that is, of the size of the dye particle which is permitted to pass the kidney filter. Bowman, for whom Bowman's capsule was named in 1842, made the first of that long line of studies on the malpighian bodies in relation to the system of tubules of the kidney work continued later by Ludwig, Cushman, Marshall, Richards, Drinker and others, which suggested that the essential action of the kidney is that of a filter.

Sollman, seventeen years ago in his perfusion experiments, found that the kidney of an animal removed from the body could be made to filter urine. Cushman by his pharmacological investigations of the elimination of drugs from the kidney, developed most important data as to kidney filtration. While it is true that urea is excreted in small amounts in the saliva, through the skin, the mucous membranes of the intestine, etc., the natural urea filter is the kidney. In this connection it is most interesting to note that urea is one of the smallest of the molecules, being but slightly above atomic size, and that it is non-hydrophobic, that is, it does not absorb water. For this reason it is one of the most diffusible molecules and passes with great rapidity in and out of the tissues of the body. While urea is non-hydrophobic, its elimination through the kidney is closely associated with the water balance. Reduced urea output is accompanied by corresponding increase in the watery constituents of the urine if a fair degree of renal function is maintained.

Sir William Crookes, who died in 1919, was the last of the great all-around physicists. Physics has grown so tremendously that each physicist of today can claim to have accurate knowledge of only a small part of the subject. Crookes, in his attempts to demonstrate the fourth state of matter, exhausted the air from a heavy glass bulb. When certain electric attachments were made, the bulb became filled with luminous matter and, as Crookes expressed it, actually touched the borderland where matter and force seem to merge into one another. He named this luminous substance the "cathode ray" which was later shown to be composed of negative electrons, such is the fundamental conception of the X-ray. He pointed out also that when X-ray comes in contact with solid matter they give rise to shadows, and that the cathode rays, when outside a magnetic field, also travel in a straight line. Roentgen was working with the Crookes tubes when he discovered the X-rays. The use of energy in the form of rays such as radium, X-ray, etc., is an example of biophysics in relation to medicine. Bayliss, speaking of chemistry and physics, says:

The boundaries between these two branches of science are rapidly becoming obliterated.

When we survey the modern field of research which goes under the general title of biophysics, the commercial inventions and developments that con-

cern physics in the sciences and arts, we get some idea of the importance of this work. Much has been neglected in its relation to medicine. Problems worked out in connection with industry, agriculture and animal husbandry have raised acutely a ripple in medicine. Perhaps we have been subject unconsciously to the theologic opinions which have recently been so broadly emphasized by world-known orators who believe that man was created independently and not through evolution of pre-existing species, few more fitting to our times than to our intelligence. One cannot but sympathize however with his recent vehement defense of the ape as not responsible for man.

Perhaps enough has been said to further the plea that biophysics be given more important place in the medical school curriculum and that some of the time of the overburdened students of medicine now occupied by chemistry be given to medical biophysics.

Castaño, G. A., and Gómez, J. F. M.: The Results of Diathermy (Diatermia). Los resultados obtenidos en el Instituto de cirugía. *Semanario médico*, 1921, 22, 821.

The authors have tried diathermy in numerous conditions, including gonorrheal arthritis, rheumatic arthritis, joint lacerations, neuritis, tubercular

adhesions, chronic pericollitis, persistent constipation, mucomembranous colitis, orchitis, prostatitis, salpingitis, oophoritis, and pelvioperitonitis. A review of their cases, which number more than 100, shows that the method sometimes gives excellent results and sometimes causes no improvement. The results were better in abdominal and gynecological diseases than in articular conditions. The majority of the cases of pain due to cicatricial bands or post-operative adhesions showed marked improvement, and some of them were cured. In cases of fully formed pericoll membranes however there was little or no improvement. Chronic constipation was often relieved considerably by diathermy. In other treatments had failed. Traumatic and infectious arthritis were also benefited, but arthritis deformans was not.

Very satisfactory results were obtained in diseases of the male genital organs. In certain cases of gonorrheal urethritis diathermy was the only treatment that put an end to the infection.

The method is contra-indicated in acute abdominal, pelvic and articular conditions, and in menorrhagia and utero-ovarian congestion.

As a rule the application is continued for thirty minutes, but in gynecological infections and gonorrheal urethritis it is more prolonged.

W. A. Baze

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Mayo, W J: The Septic Factor in the Three Great Plagues. *Canadian M Ass J* 9 J, xx, 549

A grateful world has recently celebrated the one hundredth anniversary of the birth of Pasteur whose contributions to the welfare of the human race were probably greater than those of any other man.

The conviction that bacteria are more resistant than animal organisms to specific poisons which might select the bacteria without harm to the animal cell is undoubtedly true, although recent experiments in chemotherapy have shown that there are certain poisons which will select the parasite rather than the host. For the animal parasites, great and small, specific poisons have been found: quinine for the plasmodium of malaria, emetin for the amoeba of dysentery, thymol for hookworm and male fern for tapeworm. When the malignant process is once set in motion, the abnormal, immature protective cell itself becomes the specific destructive agent. The carcinoma cell, regardless of causation, becomes as specific an agent of infection to the affected individual as any form of microbic organism and produces in each new locality of carcinoma infection the morphology of its origin.

The three great plagues of mankind are tuberculosis, syphilis, and carcinoma: manifestations of the bacterium, spirochete, and the parasitic cancer cell. Of the many features these three infections have in common the most important is their relation to the lymphatics. We are just beginning to realize the close relation of baophysics to the physiological processes of the body. It has been shown by Herzig and MacNaughton that the lymphatics are closed system of absorbents, their function being to pick up material insoluble in water and too large to enter the capillaries. Bacteria are too large to pass through the capillary interspaces and are therefore picked up by the endothelial cells which become phagocytic and by diapedesis enter the lymphatics.

Here an attempt is made to destroy or sterilize the organisms. The resistance developed by the lymphatics varies in different persons and in different forms of infection. The least phase of these contained organisms the bacilli of tuberculosis, spirochetes, and the carcinoma cell may be prolonged, resulting in renewed activity many years, due to breaking down of the lymphatic barriers from injury or intercurrent disease.

The reactions of the great infection on other men in combination which are not infrequently are disastrous especially in syphilis. According to Corner the unless we more likely to have prominent display of primary and

secondary syphilitic lesions with consequent early diagnosis and the advantages of early treatment. In carcinoma of the internal organs the disease may progress with little or no pain because of the absence of sepsis, in marked contrast with the open septic conditions of external carcinoma.

TUBERCULOSIS

The septic factor in tuberculosis is the most important factor. Tuberculosis itself seldom kills unless the products of the tuberculous infection are confined in bony box and produce furious pressure as in the brain. Other parts of the body the thorax, peritoneal cavity and the soft parts generally yield to pressure. This gives time for development of local resistance and generalized immunity.

SYPHILIS

The death rate in cases of syphilis following years of treatment is nearly the same as the normal. It is possible, or even probable that there is a certain specificity in strains of spirochetes which causes attack on the nervous system in one case and in another affects the external portions of the body.

On the other hand, in the location and progress of syphilis the individual soil may vary and the spirochetes be the same. Negroes seldom develop syphilis of the nervous system but suffer to a far greater extent than the white race from its vascular manifestations in the heart, aortic aneurism, etc. It is probable that there are in the body certain other tissues in which the spirochetes may remain latent indefinitely without manifestations. The enlarged lymph nodes may restrain the advance of the spirochetes and encapsulate them so as indefinitely to prevent evidence of their presence. In certain cases of intractable syphilis with splenomegaly which anemia is prominent symptom, prolonged treatment sometimes fails to arrest the disease. Its progress is quickly arrested and the anemia promptly overcome by removal of the greatly enlarged spleen in which spirochetes will be found.

The arsenic compounds are of great value not only as curative agent but also as public health agents, within six hours rendering carriers of the disease in contagious form such as chancres and mucous patches, temporarily incapable of infecting others. It is wise to use arsphenamin as soon as possible.

Known syphilis but there has been a wide and unfortunate tendency to use it in doubtful cases of early syphilis. The position of the patient with doubtful early syphilis who has had arsphenamin treatment is most unfortunate for he must carry the onus of suspected syphilis without knowing whether he ever really had it. Again prolonged treatment of patients with doubtful syphilis or

rather patient with doubtful Wasserman reactions, who has associated urgent surgical condition such as carcinoma, lead poisoning and loss of precious time if cure is to be obtained.

CARCINOMA

Glandular involvement in carcinoma tells the story. While operative skill and technique are important generally speaking the results show that, without regard to the type of operation a five year cure occurs 71 per cent of cases in which operation is performed for carcinoma before the glands are involved and in only 19 per cent in which it is performed after they are involved. Local operations cure local disease but massive operations fail when the local disease has passed.

While low operative mortality in carcinoma is important extension of operability is also very important because it gives larger number of patients chance for cure.

The so-called sepsis in cancer is the cause of much of the distress and hurries the patient to a fatal end. We all recognize the dangers of operating on the infected so-called inflammatory carcinoma, such as those around the mouth and the cervix. The use of the knife in these cases is often followed by rapid recurrence and metastasis from infected thrombi. (uterine) excision in these cases followed later by plating repair is step in the right direction. In many cases of infected carcinoma radium of the roentgen rays are now used and they have similar effect without the risks of the tumor destruction and sloughing which accompanied the use of the cautery. There are many in which a small amount of radium is little good and a enormous amount of harm. With good judgment they apply radium in cases in which operation should be performed with. Generally speaking the use of radium means the parting of the ways. If radium is selected one can seldom turn back and take the operative route with good prospect of success.

Robertson, W. M. F. Further Research on the Relation of Carcinoma to Infection. *Lancet* 9, 1, 337-339.

The author obtained an anaerobic bacillus of the diptheroid group from fifteen cases of carcinoma corroborating the work of his father.

SARLES KANE, M.D.

Cattell, M. Studies in Experiment I Traumatic Shock. VII. The Influence of Morphine on the Blood Pressure and Alkali Reserve I Traumatic Shock. *Arch Surg* 9, 1, 10-19.

The literature on the effect of morphine upon the circulation dates back many years. W. Kowalski, who reviewed it up to 1877 stated that morphine does not affect the vagus or vasomotor centers and its use is followed by decrease in the blood pressure due to dilatation of the blood vessels especially in the skin.

Maecht found that morphine tends to increase the permeability and turgidity of organs.

All recent workers on the subject agree that in dogs and other mammals morphine slows the heart through a central influence on the vagus. In man there is only a slight decrease in the pulse and this is associated with decreased activity.

The author carried out a series of experiments, principally upon cats in which the blood pressure was artificially depressed to 60 mm. Hg. A number of the animals were given large doses of morphine and others were used for controls. In the former there was at first a slight depression of the blood pressure but practically complete recovery within 15 hours. In the control animals the rise in blood pressure was slower and less marked.

Experiments were made also to determine the effect of morphine on the reduction of the alkali reserve which occurs in shock and low blood pressure. A cannula was placed in the pericardium to control the arterial pressure, which was reduced to 60 mm. Hg. A mercury manometer was connected to one carotid artery and in the other cannula a inverted U-tube to obtain blood for the tests. Morphine was given in doses of from 10 to 20 mgm. per kilogram of body weight.

Under the influence of the morphine there was recovery of the alkali reserve. This was most marked when the morphine was used before the blood pressure was lowered. In several cases the alkali reserve was higher at the end of three hours than it was at the beginning of the experiment. A slight decrease in the amount of oxygen utilized by the animals given morphine was probably in great measure due to the decrease in respiration which occasionally, as great as 40 per cent. Hargreaves and Stearns found that in man under the influence of morphine the total gaseous metabolism shows no material change in oxygen consumption but marked drop in carbon-dioxide elimination.

The author concludes that in the history of his own experiments and in the literature on the subject there is no evidence that morphine has any deleterious action on the circulation or that its use is contraindicated in shock.

HAROLD M. CARR, M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

MacCarty, W. C. The Cytologic Diagnosis of Neoplasms. *J. Am. Med. Ass.* 9, 1, 1222, 319.

The methods of studying cells which have been employed heretofore have been handicapped by (1) changes in the morphology due to metabolic disturbances in the immediate pre-mortem phase of the disease (2) post-mortem changes occurring between the time of death and the fixation of the tissues (3) the regulation of the cell constituents by trophic relations for fixation (4) abnormal interference in the process of embedding (5) the introduction of foreign pigments into the coagulated cell constituents, (6) the shrinkage consequent to dehydration, clearing

and mounting; and (7) the variety of pictures resulting from the cutting of many different planes through coagulated opaque cells.

Fresh living cells of malignant neoplasms are perfect spheroidal or ovoidal nucleoli. The author believes they contain multiple polar mitotic figures very rarely but never the so-called atypical irregular or asymmetrical mitotic figures described by von Hasselmann and others as characteristic of cells of malignant neoplasms. Any asymmetrical mitotic figure he has seen may be just as well attributed to the disintegration of the cells or to cutting planes through perfectly regular figures. The cytoplasm and nucleoplasm are not reticular as described and shown in textbooks. They have the structure of a fine emulsion as described by B. ylias.

Malignant cells do not resemble morphologically any adult tissue cell in the body despite the fact that they may have a similar general arrangement. They differ from ordinary regenerative cells in having a coarser or denser cellular wall, a denser cytoplasm, a denser nucleoplasm, a larger nucleolus. There is a greater variation in the extremes of size of the cells, nuclei, and nucleoli than in the normal regenerative cells of repair.

In many instances these cells cannot be differentiated from regenerative cells by 16-mm 8 mm or 4 mm lenses. The stages of differentiation can not be accurately recognized, and the relative size of the cellular component parts cannot be definitely determined. There is no standard of comparison with normal cells because histologists have not given high power morphological standards for living human cells.

It is shown by case records that, given a few cells under the oil lens, a diagnosis can be made in border line cases. This is made possible by the method of fixing and staining. A bit of tissue is placed as soon as removed on the stage of a freezing microtome, frozen, and cut from 5 to 15 microns thick. The section is first placed in physiological sodium chloride solution and unrolled, then dipped by means of a glass lifter into a strong solution of Unna's polychrome methylene blue from one to ten seconds, then transferred to, and washed in, physiological sodium chloride solution, then transferred to Brun's place, and then almost immediately drawn up on a slide and stained. If such preparation is properly made, the nucleolus is the only part of the regenerative and neoplastic cells which stains. The differentiation between regenerative cells, partially or completely differentiated cells, and the undifferentiated cells of malignant neoplasms may be made, provided the examiner is familiar with the high power morphology of normal adult cells of the differentiated tissues of the human body and with the normal phases of differentiation in the normal regeneration of tissues. W. McK. CARR, M.D.

MEDICAL JURISPRUDENCE

Responsibility of the Surgeon in the After-Care of Fractured Bones. *Huber vs. Hawley* 10 Pac Rep p 769

This case was reviewed by the Supreme Court of the State of Washington entirely on instructions given by the lower court to the jury. Huber sued the physicians claiming they negligently reduced a fracture of his right arm and negligently treated the fracture after the reduction. A judgment rendered in favor of the physicians was appealed by Huber who claimed error in the instructions given to the jury.

The Supreme Court approved the following instruction: You are instructed that here a physician undertakes the treatment of a patient not only must be used reasonable but ordinary skill and care in said treatment at the time he takes charge of said case, but also must be used ordinary skill and care in the subsequent treatment of the case, and it is his duty to give the patient such attention after the first examination or reduction of the fracture as ordinary physicians and surgeons possessing ordinary skill and intelligence practicing in the same general locality would deem necessary in similar case and if you find from the evidence that the defendant attempted to reduce the fractured radius for said plaintiff but did not thereafter use reasonable care and skill in the subsequent treatment of said fractured bone or such care as is imposed upon physicians holding themselves out as physicians and surgeons possessing the ordinary knowledge and skill of the physicians and surgeons located and practicing their profession in the same general locality, and if you further find from the evidence that because of such failure to use reasonable care and skill in the original treatment or subsequent treatment of the injured arm the plaintiff was permanently injured or suffered pain injury and damage then you will find for the plaintiff in such sum as you deem just and proper.

Several other instructions the Supreme Court held erroneous. Accordingly a new trial was granted. WILLIAM J. MOONEY

rather to treat with doubtful Wasserman reactions who have an associated urgent surgical condition such as carcinoma leads to delay and loss of precious time if a cure is to be obtained.

CARCINOMA

Glandular involvement in carcinoma of the testis. While operative skill and technique are important, generally speaking the results show that, without regard to the type of operation, five year cure occurs in 75 per cent of cases in which operation is performed for carcinomas before the glands are involved and in only 20 per cent in which it is performed after they are involved. Local operations cure local disease in every operation if and when the local stage has passed.

While local operative mortality in carcinoma of the testis is important, the most important factor in the selection of operation is the early report that because it gives a larger number of patients a chance for cure.

The associated sepsis in cancer is the cause of much of the distress and buries the patient in a fatal end. We all recognize the dangers of operating on the infected, so called inflammatory carcinomata, such as those around the mouth and the cervix. The use of the knife in these cases is often followed by rapid recurrence and metastasis from infected wounds thrombi, cellulitis, which in these cases followed later by plastic repair, is a step in the right direction. In many cases of infected carcinoma of the cervix and the paracervix are now used if they have a similar effect without the risks of the tissue destruction and along with which accompanied the use of the cautery. There are many men who with a small amount of radium do little good and a enormous amount of harm. With good faith but poor judgment they apply it to cases in which operation should be performed early. Generally speaking the use of radium is more as the part of the way. If radium is selected one can seldom let it back and take the operative route with a good prospect of success.

Robertson, W. M. F. Further Research on the Relation of Carcinoma to Infection. *Lancet* 9. 2. 1932.

The author obtained an anaerobic bacillus of the diptheroid group from fifteen cases of carcinoma corroborating the work of his father.

SAMUEL KAHN, M.D.

Castell, M. Studies in Experimental Traumatic Shock. VIII. The Influence of Morphine on the Blood Pressure and Alkali Reserve in Traumatic Shock. *Arch Surg* 9. 3. 1931.

The literature on the effect of morphine upon the circulation dates back many years. Witkowski has reviewed it. It is stated that morphine does not affect the vagus or vasomotor centers and its use is followed by decrease in the blood pressure due to dilatation of the blood vessels, especially in the skin.

Macht found that morphine tends to increase the peripheral and tonicity of organs.

All recent workers on the subject agree that in dogs and other mammals morphine slows the heart through central influence on the vagus. In man there is only a slight decrease in the pulse and this is associated with decreased activity.

The author carried out a series of experiments, principally upon cats in which the blood pressure was usually depressed to 60 mm Hg. A number of the animals were given large doses of morphine and others were used for controls. In the former there was at first a slight depression of the blood pressure but practically complete recovery within two hours. In the control animals the rise in blood pressure was slower and less marked.

Experiments were made also to determine the effect of morphine on the reduction of the alkali reserve which occurs in shock and low blood pressure. A cannula was placed in the pericardium to control the arterial pressure, which was reduced to 60 mm Hg. A mercury manometer was connected with one carotid artery and in the other cannula was inserted to obtain blood for the tests. Morphine was given in doses of from 1 to 30 mgm per kilogram of body weight.

Under the influence of the morphine there was recovery of the alkali reserve. This was most marked when the morphine was used before the blood pressure lowered. In several cases the alkali reserve was higher at the end of three hours than it was at the beginning of the experiment. A slight decrease in the amount of oxygen utilized by the animals given morphine was due probably in great measure to the decrease in respiration which occasionally, as as great as 5 per cent. Higgins and M. also found that in man under the influence of morphine the total gaseous metabolism shows no material change in oxygen consumption but marked drop in carbon dioxide elimination.

The author concludes that in the findings of his own investigations and in the literature on the subject there is no evidence that morphine has any deleterious action on the circulation or that its use is contra-indicated in shock.

WILLIAM M. CAMP, M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

MacCarthy, W. C. The Cytologic Diagnosis of Neoplasms. *J. Am. Med. Assn.* 9. 3. 1931, p. 9.

The methods of studying cells which have been employed heretofore have been handicapped by (1) changes in the morphology due to metabolic disturbances in the immediate pre-mortem phase of the disease (2) post-mortem changes occurring between the time of death and the fixation of the tissues (3) the coagulation of the cell constituents by strong solutions for fixation (4) abnormal treatment in the process of embedding (5) the introduction of foreign pigments into the coagulated cell constituents (6) the shrinkage consequent to dehydration clearing.

Epidemic cerebrospinal meningitis associated with acute degeneration of the middle ear. I. S. PRINHAM and D. McKEOWN. *Proc Roy Soc Med Lond* 9 3, xv, Sect Otol 51.

Otic pterygo-maxillary abscess induced by thrombophlebitis of the jugular bulb. D. McKEOWN. *Proc R Soc Med Lond*, 19 3, vi, Sect Otol 53.

A case of vertigo cured by opening the external semicircular canal. W. M. MONTGOMERY. *Proc Roy Soc Med Lond*, 19 3, xvi, Sect Otol 60. [532]

Report of a case of chronic mastoiditis with stenoplastic operation recovery. I. M. SIMON. *Laryngoscope* 19 3, xxiii, 6 5.

A study of the mechanism of pain seen otologically over. L. HERBERT. *Laryngoscope* 19 3, iii, 996 [532]

Nose

Deformities of the nose. F. F. LOCK. *U S N A M B J*, 913, xix, 5.

A foreign body in the nares. C. H. C. *U S N A M B J*, 913, xix, 169.

Foreign bodies to the nasal fossae. L. ACHER and M. SCHULZ. *Med Thera*, 9 3, vii, 85.

An unusual nasal polyp. P. M. ALBANI. *NY U N A M B J*, 9 3, xix, 60.

A case of fibrosis of the nose. L. POWELL. *Proc R Soc Med Lond* 9 3, xvi, Sect Laryngol 66.

Fibrosarcoma of the nasopharynx treated by operation. W. H. MACPHERSON. *Laryngoscope* 19 3, xxiii, 653. [532]

A case of epithelioma of the vestibule of the nose after treatment by radium. J. DUNDAS GIL. *Proc R Soc Med Lond*, 9 3, xvi, Sect Laryngol 65.

Spatial deviations of the nose. *Med Times*, 9 3, li.

The significance of pneumatization of the maxilla in relation to anthropological considerations. *Laryngoscope* 19 3, xxiii, 565.

Cerebrospinal rhinorrhea, with the report of a case. J. E. LOWERY. *Laryngoscope* 9 3, xxiii, 6. [532]

The diagnosis and treatment of nasal sinus disease. A case report. W. M. WOODRUFF. *J South Carolina M A*, 19 3, xii, 560.

The management of acute sinus infections. J. C. TIER. *Nebraska State M J*, 9 3, vii.

Streptococcus hemolyticus infection of the nose in a very young and wasted child. J. C. BOO. *J Indiana State M A*, 923, 4, 40.

Dental surgery of the maxillary sinus. M. DE LA MOULAYE. *J Zahnheilk*, 9 3, xli.

A case of maxillary sinusitis. H. M. H. *U S N A M B J*, 9 3, xix, 111.

Mouth

The surgery of hardpal and softpal deformities. J. W. CROFT. *South M J*, 9 3, i, 11. [531]

The cause and effect of malocclusion of the teeth. F. M. W. *NY N Y M J & Med Rev*.

The diagnosis. W. C. T. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The diagnosis and death. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The diagnosis and the relation to the teeth. *NY N Y M J & Med Rev*, 9 3, xix, 168.

The prevalence of oral disease in the general health. B. B. M. *NY N Y M J & Med Rev*, 9 3, xix, 165.

Gastric hyperacidity: an individual factor in pyloric stenosis. J. J. T. *NY N Y M J & Med Rev*, 9 3, xix, 35.

Some observations on the histology and pathology of the dental pulp. A. H. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The present status of the pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The pulp. *NY N Y M J & Med Rev*, 9 3, xix, 35.

Throat

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The throat. *NY N Y M J & Med Rev*, 9 3, xix, 35.

The treatment of contracture of the facial nerve by series anastomoses M ALBERGLOD and C T ALLIENOR
Rev Assoc med argent 19 3, xxxvi, 39

The medical anatomy and drainage of otitic meningitis E D D DAVIS Proc Roy Soc Med Lond 9 3, xi, Sect Otol 43 [544]

Sarcoma of the meninges causing pseudo Parkinsonian syndrome BLOQUET DE CLARIE and TRÉPOLLIER
Bull et mém Soc anat de Par 9 3, xiii, 4 7

Spinal Cord and Its Coverings

Radiographic localization of spinal lesions by Secord method P SARGENT Brit M J 9 3, ii, 74 [544]

Consideration of some surgical conditions of the spinal cord J A CALDWELL Cincinnati J M 9 3, iv 74

Peripheral Nerves

Report of case of spastic hemiplegia G PEREIRA
Proc Roy Soc Med Lond 9 3, xvi, Sect Study Dis Child 75

A case of Erb's paralysis G PEREIRA Proc Roy Soc Med Lond 9 3, xvi, Sect Study of Dis Child 74

A case of birth injury to the brachial plexus all cords of the plexus originally involved recovery of function of the wrist and posterior cords, paralysis now of the infraclavicular or Klumpke type C WOLSTER DROUGHT Proc Roy Soc Med Lond 9 3, xvi, Sect Study Dis Child 73

Drop wrist—traumatic and bilateral E M LILLMOY Boston M & S J 9 3, xxxix, 309

The treatment of sciatic neuritis by epidural injection of suspensions sulphat GAROFANO and LABIN Arch med belge, 9 3, lxxvi, 473

The treatment of trophic disturbances secondary to section of the sciatic nerve HARTZ 13 chi 19 3, xv 338

Neuromata (false neuromata) cicatrices of the nerves M TONTON Ann ital di chir 9 3 600

Operations for an injuries of peripheral nerves II SCHIAPPE Deutsche Ztschr f Chir 9 3, clxxx, 284

Double union of one nerv trunk to another P MA Arch f klin Chir 9 3, cxi 605 [545]

Discussion on the operative treatment of spastic paralysis A S B B KANT T H OYENAR G RINDOCH, F M LITTLE and others Proc Roy Soc Med Lond 9 3, xi Sect Orthop 33 [546]

Sympathetic Nerves

The surgery of the sympathetic nerves 53 tem 1 B URG Med Klin 9 3, xi 67

Edematous stump with trophic ulceration treated by per arterial sympathectomy OUDARD and JE L on bar 9 3, xi 310

Miscellaneous

Organic diseases of the central nervous system and their relation to the previous operative removal of endocrine glands A W STRAUSS Klin Wchnschr 9 3, 309

Some unsolved problems in neurological surgery 1 SACRE Virginia M Month 9 3, i, 40

A technique to reduce the incidence of headache following lumbar puncture in ambulatory patients, with plea for more frequent examination of cerebrospinal fluid H M GALTBY Northwest Med 9 3, xiii, 240

SURGERY OF THE CHEST

Chest Wall and Breast

Additional observations on the disease picture of solitary metastasis with the formation of nodules the breasts E GLASE Deutsche Ztschr f Chir 9 3, clxxx [547]

Panenchymatous hypertrophy of the breast D C I Fitch Williams Lancet, 9 3, ccv 8

Tumors of the breast F E B WTS Ohio State M J 19 3, xii, 56 [548]

Cancer of the breast L D BLUMLEY Am J Clin Med 9 3, xii, 356

Carcinoma of the breast S O BLACK South M & S 9 3, lxxix 40

Trachea, Lungs, and Pleura

A foreign body removed from the trachea of child aged 6 months H SHURTSWAITE Proc Roy Soc Med Lond 9 3, xvi, Sect Laryngol 66

Foreign bodies in the lower respiratory tract V FARRIS GALL Clin y lab 9 3, i, 9

Some principles involved in the broncho-copic removal of foreign bodies F J RIGANOW Atlantic M J 9 3, cxxv 720

A compression operation for the treatment of unilateral pulmonary tuberculosis A J OCKE JR and F T H DOCKLER Surg Clin N Am 9 3, iii, 94

The mechanism of action of artificial pneumothorax on the basis of anatomopathological observations F PARNOW Polichn Rome 9 3, xxx, ses part 49 [547]

Pulmonary abscess roentgenographically considered W H SYRANK J Radiol 9 3, i, 77 [548]

Sclerosis of the lung I FETTER Bull et mém Soc d Par 9 3, xviii, 459

Heart and Pericardium

Rupture of the heart F COSTE Bull et mém Soc anat de Par, 9 3, xviii, 487

Stab wound into the left ventricle of the heart J F X JONES J Am M Am 9 3, lxxxi 476

Cardiac resuscitation HARTUNG Best Klin Chir 9 3, cxxx, 4 3

Birdseye view of suppurative pericarditis in childhood H APPEL Arch Pediat 9 3, i, 50

Tuberculosis of the pericardium W L WALLY Las cet, 9 3, ccv 278

Esophagus and Mediastinum

Lactic obstruction of the esophagus F B McMURRY Surg Gynec & Obst, 9 3, xxxvi, 4

A study of group I symptoms associated with large thymus in infants and children R G FARRER Arch Pediat 9 3, xl, 456

The surgical treatment of thymic asthma and the importance of the thymus in surgical infections E BERNARD Deutsche Ztschr f Chir 9 3, clxxx, 30 [548]

Malignant epithelial thymoma report of case with necropsy N C. FOOT and H HARRINGTON Am J Dis Child 9 3, xxvi, 64

- Mickel's diverticulum as an etiological factor in intestinal obstruction. report of three cases J A JONSON *Minnesota Med* 923, vi, 470
- Mickel's diverticulum and intestinal obstruction H L Foss *J Am M Ass* 93, 1923, 90 [555]
- A case of ileocecal tuberculosis BRUNER *Beitr Klin Chir* 1923, cxxix, 451
- Traumatic lesions of the intestine caused by non penetrating blunt force B M VASCH *Arch Surg* 923, vi, 197 [555]
- The intestinal rate and the form of the faeces F L BUCKERT *Am J Roentgenol* 93, 2, 599
- Recent pharmacological studies in intestinal peristalsis V E HENDERSON *Canadian M Ass J* 1923, xii, 560
- The spastic colon H N MacKECHNIE *Surg Clin N Am*, 1923, ix, 35
- The treatment of spastic constipation C D AARON *Am J M Sc*, 93, div. 816 [556]
- Ulcerative colitis A A STRAUSS *Surg Clin N Am* 1923, ix, 1923 [556]
- Chronic ulcerative colitis and its treatment W H Ott *Virg M M Month*, 93, 1, 304 [557]
- Duodenal enzymes in chronic ulcerative colitis P W BROWN *Med Clin N Am* 923, vi, 97 [557]
- Dysenteritis of the caecum, with report of three cases R W FRICKER *Boston M & S J* 923, cxxix, 307
- Irrigation of the cecum coli of many years duration J O SHERKILL *Kentucky M J* 1923, xxi, 436
- Enterocystoma of the caecum G LOTTENBERG *Deutsche Ztsch f Chir* 1923, cxxix, 394
- Hernia of the vermiform appendix through Hesselbach triangle M W SCHOENBERG *Lancet*, 1923, cxxv, 80
- The significance of appendiceal stasis as demonstrated by the barium meal W A E ABB *J Michigan State M Soc*, 1923, xiii, 134
- Chronic appendiceal disease M BRADY *Beitr pathol Anat* 1923, xiii, 207
- The fat reactions in appendicitis and cholecystitis. A KOLONY *J Iowa State M Soc* 923, xiii, 346 [557]
- Oedema of the descending colon from peritonitis due to appendicitis P ROCHET and MAILLET *Guy Presse med* Par 1923, xiii, 67
- Cystic appendicitis POTTER and CAUDREX *Gynec et obst* 1923, viii, 516
- Carcinoma of the appendix, with report of one case R J SMAYER *Boston M & S J* 1923, cxxix, 306
- Acute sigmoiditis perforation and general peritonitis following rectal injection C MACDONALD *Med J Australia*, 1923, d, 10 [557]
- A modification of Lambert's method of forming an ileal colostomy I HAYES *Bull et mém Soc d chi de Par* 923, xix, 414 [558]
- The treatment of rectal prolapse in children by the prone position P WIDOWITZ *München med Wchnscr*, 1923, lxx, 300 [558]
- Conjugal structure of the rectum in children V C DAVIS *Surg Clin N Am* 1923, ix, 5
- Conjugal rectal structure as the cause of infantile impaction V C DAVIS *Surg Gynec & Obst* 923, cxxix, 97
- The importance of proctoscopic examination L A BRUN *Med Clin N Am* 93, vi, 3 [558]
- Bleeding from the rectum A A LANDSMAN *Arch Pediat*, 1923, x, 331
- Fistula of the rectum C J DRENNAN *J Iowa State M Soc*, 1923, x, 330
- Improvement in the method of operating in fissure and fistula. A T COOPER *J Am M Ass* 1923, 1923, 548
- The early diagnosis of cancer of the rectum A CHOICE *Ill. Northwest Med.*, 1923, xix, 263.

- A simple, bloodless, ambulant haemorrhoid operation J B H WARD *Therap Gaz* 923, 3, xxxix, 535
- The surgical physiology of the large intestine C LIEZEVILLE *Arch franco belges de chir* 923, cxxv, 5 [559]
- Total colectomy P DUVAL *Bull et mém Soc de chir de Par* 923, xix, 66

Liver Gall Bladder Pancreas, and Spleen

- An experimental anatomical investigation into the blood and bile channels of the liver, with special reference to the compensatory arterial circulation of the liver in its relation to surgical ligation of the hepatic artery H N SEDALL *Surg Gynec & Obst* 923, cxxix, 5
- Observations upon the phenotetrachlorophthalen test for liver function C C HIGGINS *Ann Clin Med*, 923, 30 [559]
- Animal experimentation on the influence upon the secretion of bile of the administration of fluids, preparations of internal secretory glands, and various drugs O SERRA *Beitr Klin Chir* 923, cxxix, 249 [559]
- Infections produced in the United States G BLUMER *J Am M Ass* 1923, 1923, 313
- Hepatic abscess, case report L W FRANK *Kentucky M J* 1923, xxi, 403
- Hydatid cyst of the liver opening into the duodenum G JEAN *Bull et mém Soc anat de Par* 1923, cxxix, 423
- Biliary pseudo-adenoma of the liver C OBERLIN *Bull et mém Soc anat de Par* 1923, cxxix, 437
- Malignant disease of the liver case report with autopsy findings H NUNN *South M & S* 923, lxxiv, 47
- An intrabiliary biliary epithelioma in woman of 23 years L BRIDGES *Bull et mém Soc anat de Par* 1923, cxxix, 45
- Four cases requiring liver surgery A E HALLIBRAD *Surg Clin N Am* 1923, ix, 973
- The mortality after liver and pancreas operations E S JORD and J H LYONS *Ann Surg* 93, 1923, 93 [560]
- A consideration of tumor as a symptom of gall bladder disease R S FOWLER *Am J Surg* 923, cxxix, 304
- Some important points in the diagnosis of gall bladder disease the technique of cholecystectomy G L Mc WHESTER *Surg Clin N Am* 923, ix, 949
- Peritonitis following operation for chronic cholecystitis of biliary origin B Z CARMEL *vs Atlantic M J* 923, cxxvi, 732
- The influence of cholelithiasis upon the digestive tract C ROBERT *Klin Wchnscr* 1923, ii, 631 [560]
- The effect of cholelithiasis and cholecystectomy on the secretory function of the stomach and duodenum E DALOGHAT *Beitr Klin Chir* 923, cxxix, 605 [561]
- Pyloric and duodenal stenoses due to gall-stones and their surgical treatment F PANTY *J de méd de Bordeaux*, 1923, x, 207 75 [561]
- Cholecystectomy for biliary transverse section of three-quarters of the circumference of the common duct, suture, cure F PANTY *Bull et mém Soc de chir de Par* 93, xix, 313 [561]
- Subsequent examinations of patients operated upon for gall-stones in the Serafin Hospital in the period from 80 to 19 K GRANLÉN *Hygien, Stockholm*, 93, lxxiv, 356 [561]
- Cholecystectomy without drainage W A COVENTRY *Surg Gynec & Obst*, 1923, cxxix,
- The care of the stump after cholecystectomy E SERRA *Zentralbl f Chir*, 1923, l, 712 [562]
- The end results of 250 cholecystectomies and eighty-two choledochotomies from the standpoint of postoperative

complaints L. Scaow and A. SCHLIMMEL. *Beitr. klin. Chir.* 1923, *ccviii*, 695. [562]

Surgery of the gall-bladder S. BOYVILL. *California State J. M.* 1923, *xiii*, 287, 390

Special points in gall bladder surgery G. W. CHILL. *Ann. Surg.* 1923, *lxxviii*, 19. [563]

The selection of cases which may be benefited by inter-renal or costotransverse medical drainage of the gall tract, with brief discussion of methods B. B. V. L. O'V. *Internat. J. Surg.* 1923, *xxviii*, 285. [562]

Stones in the common and hepatic ducts J. SEIZENR. *Lancet*, 1923, *cvi*, 7. [563]

The surgery of the hepatic and common bile ducts W. J. MAVO. *Lancet*, 1923, *cvi*, 309. [563]

Repair of the common duct L. L. McARTHUR. *Surg. Clin. N. Am.* 1923, *ix*, 953

Secondary operations upon the biliary system B. MORMAN. *Lancet*, 1923, *cvi*, 4. [565]

Chronic biliary fistula Implantation of sown into the stomach H. LUTHERAL. *Ann. Surg.* 1923, *lxxviii*, 965. [565]

Pancreatic pain as characteristic early symptom in acute pancreatitis F. GLASS. *Deutsche med. Wochenschr.* 1923, *xlix*, 373. [566]

Accessory pancreas pylorotomy cerebral metastases and death O. DAKO, JEA and S. S. BULL. *Bull. et mèm. Soc. de chir. de Par.* 1923, *xlix*, 1078

Acute hemorrhagic pancreatitis case presenting certain unusual features A. G. T. FISHER. *Brit. J. Surg.* 1923, *xi*, 170. [566]

Chronic pancreatitis G. F. PETRASCHOWSKAJA. *Festschr. Prof. Netschajeff's 50-jähr. Dokt. Jubil.* 9, 2, 2, 298. [566]

A clinical study of pancreatitis J. B. DEAYER. *Ann. Clin. Med.* 1923, *iv*, 1. [566]

Early operation for acute pancreatitis E. SCHWARTZ. *Wien. klin. Wochenschr.* 9, 2, *xcviii*, 997

Pancreatic cyst A. D. BOY. *Surg. Clin. N. Am.* 1923, *ix*, 687. [567]

Pancreatic cyst W. J. LITVINOFF. *Novy. Chir. Arch.* 1923, *iv*, 4, 1. [567]

Cancer of the pancreas report of cases H. I. GOLD. *Study J. Med. Soc. N. Jersey* 1923, *xx*, 26

Röntgenological diagnosis of carcinoma of the tail of the pancreas T. SCHWARTZ and F. PRITTY. *J. Am. M. Ass.* 9, 3, *lxviii*, 73. [567]

The splenic function P. CHEVALLIER. *Presse méd. Par.*, 1923, *xxxii*, 69

The rôle of the spleen in certain anæmic conditions L. S. CROSS. *N. York M. J. & Med. Rec.*, 1923, *cxxxv*, 227

A case of splenic anæmia J. RIEUX and G. DELAVER. *Bull. et mèm. Soc. med. d. hôp. de Par.* 1923, *l*, *xcviii*, 157

Splenectomy in hæmorrhagic purpura J. M. HENRIOT. *Ann. Surg.* 1923, *lxxviii*, 186. [568]

Miscellaneous

Actinomycosis of the abdomen. N. TAGLIAVACCHI. *Rev. Soc. med. argent.* 1923, *xcviii*, 203

Actinomycosis of the abdominal wall H. ALBERT, J. B. HARRY and J. W. HARRISON. *J. Am. M. Ass.* 1923, *lxviii*, 653

The roentgen analysis of the right diaphragm E. H. SUTHER. *J. Radiol.*, 1923, *iv*, 270

Eversion of the diaphragm M. B. CLOFFET. *Ann. Surg.* 1923, *lxxviii*, 155

Strangulated diaphragmatic hernia of traumatic origin, with report of case J. L. CAHOE. *Surg. Gynec. & Obst.* 1923, *lxviii*, 85

Two cases of traumatic diaphragmatic hernia. COOBER, GORE, and JACO. *Bull. et mèm. Soc. de chir. de Par.* 9, 3, *xlix*, 1022

Postoperative eversion M. BUIALDI. *Ann. ital. di chir.* 1923, *x*, 6

The differential diagnosis of cuts abdominal conditions in childhood J. S. STONE. *Boston M. & S. J.* 1923, *cxviii*, 303

The problem of diagnosis in surgical lesions of the right iliac region A. B. COOPER. *J. Am. M. Ass.* 1923, *lxviii*, 697

The recognition of intra-abdominal growths W. THIERCKHOFF. *Deutsche med. Wochenschr.* 1923, *xlix*, 66

The technique of examination by pneumoperitoneum K. FRIE. *Fortschr. d. Geb. d. Roentgenstrahlen*, 1923, *xix*, 56

A report of three unusual abdominal cases C. H. PARSONS. *Am. J. Roentgenol.* 1923, *x*, 609. [568]

Resuscitation in abdominal surgery W. T. BARCOCK. *Am. J. Obst. & Gynec.* 9, 3, *vi*, 70. [568]

GYNECOLOGY

Uterus

The surgical aspects of uterine displacements J. A. PRYDE. *J. Iowa State M. Soc.* 9, 3, *lxv*, 35

The technique of surgical intervention in retroversion of the non-pregnant uterus R. PACTER. *Gynec. et obst.* 19, 3, *viii*, 123

Endometrium for surgical intervention in retroversions of the non-pregnant uterus H. HERRINGHAM. *Gynec. et obst.* 1923, *viii*, 101

A brief series of uterine suspension cases with follow up results J. R. BOWEN. *J. South Carolina M. Ass.* 1923, *xxv*, 507

Uterus becomes duplex with enormous unilateral hemiometropies from retention of menstrual fluid for at least seven years. B. C. HUNT. *Am. J. Obst. & Gynec.*, 1923, *vi*, 33

Surgical relief of dysmenorrhea C. C. KENNEDY. *Min.nesota Med.*, 1923, *vi*, 207

The treatment of benign uterine hemorrhage by irradiation W. C. DANFORTH. *Am. J. Obst. & Gynec.* 1923, *vi*, 7

Two cases of tuberculous of the endometrium. P. F. WILLIAMS. *Am. J. Obst. & Gynec.* 1923, *vi*, 230

Intestinal atresia. Aetiology and their treatment O. PARASCHOFF. *Gynaekologie. Abhandlungen*, 1923, [570]

The incidence of cervical erosion following normal childbirth and results obtained with the DeCarson method W. KIRWAN. *Am. J. Obst. & Gynec.* 1923, *vi*, 85

Cancer of the uterus J. W. LUND. *South M. & S.* 1923, *xcviii*, 414

Cancer of the neck of the uterus treated with radium, cure maintained for twelve years DARRAN. *Bull. et mèm. Soc. de chir. de Par.* 1923, *xlix*, 223. [570]

Hysterectomy in certain cases of pulmonary tuberculosis, particularly as an alternative for therapeutic abortion J. F. BALLOW. *Surg. Gynec. & Obst.* 1923, *lxviii*, 201

Surgical treatment of fibromyomata versus roentgen therapy CASTRO SILVA Rev de gynéc d'obst 9 3 1933, 46

Hysterectomy for fibromyomata previously irradiated F KARYANO BLASCO Arch de med chirug y especial, 1933, 2, an de la Soc ginec españ 73 [576]
Technique in abdominal hysterectomy C T SOUTHERN Gynecol J M 1933, iv 303
Vaginal hysterectomy combined with colpoversecor deeply and colpoperineorrhaphy C CULBERTSON Surg Clin N Am 9 3, iii, 37

Adrenal and Peri-Uterine Conditions

Radiography of closed fallopian tubes W T KROCKEY Am J Obst & Gynec 923, vi, 3 [570]
Insulation of the uterus and fallopian tubes A H ALLEN Am J Obst & Gynec 9 3, vi, 53 [570]
Ovarian cysts in children H T WILSON Texas State J M., 923, xii, 343

Suppurating cyst of the right ovary with necrosis of anterior wall of the rectum TOURELUX and BAILLAT Bull Soc d'obst et de gynéc de Par 9 3, xii, 458

The relation between adnexal disease and appendicitis M FISCHER Mosenchen med Wchnschr 9 3, lxx 353
The clinical aspects of adenomyomata of the female pelvis E. A DONALD Proc Roy Soc Med Lond 923, xvi, Sect Obst & Gynec 8 [571]

Primary chorio-epithelioma of the broad ligament BENNETT and MOULOUVERT Bull Soc d'obst et de gynéc de Par 9 3, xii, 306

Nodular cyst of the broad ligament BRYET and FOURNIER Bull Soc d'obst et de gynéc d Par 9 3, xii, 397

External Genitalia

Ectopias in women report of case W E LOWME J Urol 9 3, 49

Gastrovaginal fistula secondary to an enormous accumulation of pus in Douglas pouch E GONLEWART Bull Soc d'obst et de gynéc de Par 9 3, xii, 340

Vesovaginal fistula after Wertheim operation ANDRE and GRANDJEAN Bull Soc d'obst et de gynéc de Par 923, xii, 324

Rupture of the bladder in case of vaginal defect SCHURKERT Beitr klin Chir 9 3, cxxx, 454

Some suggestions in the removal of Bartholin gland duct retention cysts without rupture C E BARAKAT Urol & Cutan Rev 9 3, xxvii, 490

Primary carcinoma of the femal urethra report of case treated by diathermy V J O'CONNOR Urol & Cutan Rev 9 3, xxvii, 475 [571]

Miscellaneous

Methods of anesthesia in gynecology SCHONKNEIT Gynec et obst 9 3, viii 34

The Pfannenstiel incision in gynecology P TEL and VERGORY Lyon chir 923, xii, 809

Postoperative adhesions following gynecological laparotomies E HAGO and K HEDDORFER Mosenchen med Wchnschr 923, lxx, 463 [571]

The indications and limitations of irradiation in obstetrics and gynecology H C WILLIAMSON N York State J M., 9 3, xxi, 34

Tuberculosis of the genitalia, with review of the literature B SOLOMONS Med Press, 19 3, cxxv, 3

OBSTETRICS

Pregnancy and Its Complications

Antenatal diagnosis F M HUXLEY Lancet, 923, cxx, 321

Röntgenograms of the fetal skeleton as positive sign of pregnancy I F STEIN and R A ARNOLD J Am M Ass 9 3, lxxv, 4 [574]

Pregnancy after interposition of the testis I F STEIN J Am M Ass 9 3, lxxv, 468

The weight during pregnancy C R HANNAH Texas State J M., 923, xii, 224 [572]

Ocular disturbances in pregnancy and during the puerperium M M BLACK J Am M Ass 9 3, lxxv, 539

Bacterial endocarditis complicating pregnancy M KROCKEY Bull Lying In Hosp N York 9 3, xii, 359

Nephrotheliosis and pregnancy A P HEDDERICK Am J Obst & Gynec 9 3, vi, 9

Torsion of the ovum during pregnancy SCHMEFFER and KELLER Bull Soc d'obst et de gynéc de Par 923, xii, 441

The convulsive tumors of pregnancy R McPHERSON Boston M & S J 9 3, cxxxix, 9

The treatment of toxemia of pregnancy with convulsions T FERNAL J South Carolina M Ass, 923, xii, 518

Abdominal pain during pregnancy R HOBBS ALICORTA Clin J Feb 923, x, 38

Placental tumors complicating pregnancy and their treatment G W KORMAN Am J Obst & Gynec, 923, vi, 61 [573]

Fibromyomata and pregnancy hysterectomy AUNE and FOURNIER Bull Soc d'obst et de gynéc de Par 923, xii, 416

Fibromyoma and pregnancy hematomata and intra-uterine polyp, subtotal hysterectomy cure FOURNIER Bull Soc d'obst et de gynéc de Par 923, xii, 414

Myomectomy in the eighth month of pregnancy PLAUT and GAUDON Bull Soc d'obst et de gynéc de Par 923, xii, 306

Report of case of spontaneous rupture in fibroid tumor with false diagnosis of placenta previa G W KORMAN Am J Obst & Gynec 9 3, vi, 327

Report of case of endometritis decidua polypoma E C SADE Am J Obst & Gynec 923, vi, 306

Placenta previa in twin pregnancy M. ROBINSON Bull Lying In Hosp N York, 923, xii, 360

Pregnancy carcinoma of the cervix, radium therapy continuation of the pregnancy living child H HARTMAN and S FARRAR Bull Soc d'obst et de gynéc de Par 923, xii, 67

Miscellaneous C H W TERS Nebraska State M J 19 3, viii, 289

Full term ectopic pregnancy with living child F A DORRMAN Am J Obst & Gynec 923, vi, 319

A case of abdominal pregnancy at sixteen months H S GILBERT and J S McEW South M J 923, xvi, 623

The diagnosis of tubal pregnancy E NOVAK Am J M Soc., 923, cxvii, 326

The prognosis of tubal pregnancy E. McDONALD Am J Obst & Gynec 923, vi, 72 [572]

Specimens of twins, antenatal pregnancy VALLOIS and ROCHET Bull Soc d'obst et de gynéc de Par 923, 22, 227.

Papyaecus from report of case F J KETTER R L KETTER, and I B BARTLE Northwest Med 923, 22, 291.

Labor and Its Complications

Delivery 1 term long interval between typhoid of twins S RAY Bull Soc d'obst et de gynéc de Par 923, 22, 400.

The etiology of eclampsia R OTTERBEY J Am M Am 923, 22, 203 [574]

Twins eclampsia and fetal eclampsia LAFONT and GARPOUX Bull Soc d'obst et de gynéc de Par 923, 22, 24.

The treatment of eclampsia—symptoms B M A WACE, W GILLIARD W D MACON W S DOWDY, and others Therap Gaz 923, 22, 222, 457 [574]

The alteration of pulse in labor W B BLACKBURN Texas State J M 923, 22, 3.

Methods of anesthesia during labor O J RAPPY Gynec et Obst, 923, 22, 222.

Isopropyl alcohol anesthesia in obstetrics H A VANDERBILT and KONTALOFF F W PRINCE Texas State J M 923, 22, 26.

Sacral anesthesia in obstetrics S P OLDERA Kentucky M J 923, 22, 222.

Two cases of epidural sacral anesthesia for the difficult application of forceps GARREY and BERNARDINI Bull Soc d'obst et de gynéc de Par, 923, 22, 347.

The intracranial mechanism of labor and its relation to later disabilities of the child H CROFTON Am J Obst & Gynec 923, 22, 222.

Spinal and cranial injuries of the baby in breech delivery R N FERRIS Am J Obst & Gynec 923, 22, 222.

Version D J DAVIES Cincinnati J M 923, 22, 222.

Labor complicated by congenital diaphragmatic hernia, with autopsy findings D LORANGER Am J Obst & Gynec 923, 22, 222.

Prolonged aseptic retention of the placenta F HOCHE Bull Soc d'obst et de gynéc de Par 923, 22, 222.

Brachyotomy, craniotomy and cesarean section A L CROFTON Lancet, 923, 22, 222.

Cesarean section L BLACKBURN Texas State J M 923, 22, 222.

Abdominal cesarean section H MAGA LIAZO Rev de gynéc, 923, 22, 222.

Gastro-intestinal herniation following cesarean section for central placenta previa LAFONT Bull Soc d'obst et de gynéc de Par 923, 22, 222.

Indications for cesarean section podalic version J GILBERT Texas State J M 923, 22, 222.

Force cesarean section, twin pregnancy M A PUGH Rev de clin méd Mex 923, 22, 222.

Persistent accumulation of lacrimated uterus—cesarean section F A DORRAN Am J Obst & Gynec 923, 22, 222.

Cesarean section with hysterectomy for congenital malformation of the vagina J E CONYER and J C SCOTT J Am M Am 923, 22, 222.

A diaphragm at the internal os complicating pregnancy, cesarean section recovery LAY VI and LORTIE Bull Soc d'obst et de gynéc de Par 923, 22, 222.

Spontaneous rupture of a chorionic scar G DUCORNEY Cincinnati J M 923, 22, 222.

The report of a case of rupture of the uterus R R DERRY Virginia M Month 923, 22, 222 [575]

Maternal mortality in Richmond, preliminary survey C C HENSON and M P REEDER Virginia M Month 923, 22, 222.

Puerperal and Its Complications

Two cases of puerperal psychosis R CROFTON and M RIVIERE Bull Soc d'obst et de gynéc de Par 923, 22, 222.

The prognosis of puerperal eclampsia in cases of expulsion of dead and macerated fetuses J M ROYER Bull Soc d'obst et de gynéc de Par 923, 22, 222.

Vaccinotherapy in puerperal infection VABRY, VABRY and SCHALLER Lyon chir 923, 22, 222 [575]

New-born

Care of the newborn in the first weeks of life E J HICKEY Texas State J M 923, 22, 222.

Placental iron—its relationship to iron metabolism A C WILLIAMS Surg Gynec & Obst, 1923, 22, 222.

The circulatory, respiratory and nervous disturbances in the newborn O B McFARLAND Texas State J M 923, 22, 222.

Blood pressure in the newborn following normal and pathological labor R KINE and A J CHALCOTTE Surg Gynec & Obst, 923, 22, 222.

Herniography in the newborn L A WILCO Bull Lying In Hosp, N York, 923, 22, 222.

Intracranial hemorrhages in the newborn W SCOTT J Am M Am, 1923, 22, 222.

Persistent cyanosis in the newborn D H BARNETT Arch Ped 923, 22, 222.

Infant mortality in the cities of Texas J H DAVIS Texas State J M 923, 22, 222.

Miscellaneous

Prenatal care and maternity welfare from the standpoint of the state F L MICKA N York State J M 1923, 22, 222.

Prenatal care and maternity welfare from the standpoint of the regional consultant J K QUIGLEY N York State J M 923, 22, 222.

Prenatal care and maternity welfare from the standpoint of the maternity center without hospital connection G W KIRK N York State J M 923, 22, 222.

Prenatal care in cases affiliated with hospitals J O FORAN N York State J M 923, 22, 222.

Some obstetrical problems F T EVANS J Missouri State M Am 923, 22, 222.

Problems of obstetrical practice W W CHITMAN Bull Lying In Hosp N York, 923, 22, 222.

The diagnosis of borderline obstetrics G C MOWERS Am J Obst & Gynec 923, 22, 222.

The sociological responsibility of obstetrics and gynecology O P HICKEY Texas State J M 923, 22, 222.

Observations on the electric breast pump I A AIT J Am M Am 923, 22, 222.

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

Compensatory hypertrophy of the adrenals in guinea pigs and rabbits O. SANCHEZ Beitr klin Chir 93, 3, 322, 323

Congenital tumors of adrenal origin, with particular reference to hypernephroma of the kidney—with report of three cases R. L. PITTMAN South M & S 923, 439, 440

Demonstration of patient in whom one suprarenal gland was extirpated because of suprarenal arterial gangrene SALONA Verhandl d Gesellschaft f Chir Moskau 1922 [877]

Excision of the kidney E. PAPP Arch franco belge de chir 923, xxvi, 65

A consideration of kidney function W. W. JAKKILL J Med Ass Georgia, 93, 22, 23

The benzoin test for renal function F. B. KIVORNER Arch Int Med 93, xxxiii, 75

The index of estimation of phenolphthalein test as a indication of surgical risk L. F. MILLER Urol & Cutan Rev 923, xxvii, 473

Salivary urea and the mercury combining power of saliva: new and simple index of renal insufficiency F. S. HENCK Med Clin N Am 923, vii, 3 [877]

Dilatation in estimating surgical insufficiency of the kidney E. JOSEPH 47 Verhandl d deutsch Gesellschaft f Chir 1923 [578]

Some sources of error in the interpretation of the phenalein test, with special reference to the effect of exercise W. H. HIGGINS Virginia M Month 93, 1, 265

Free grafting of omentum in a case of pericolic nephrectomy for movable kidney, repeated crises of anuria cured by ureteral catheterization O. MASCARDI Bull et mèm Soc de chir de Par 93, xlv, [578]

Three cases of traumatic rupture of the kidney CRATON J d urol mèd et chir 1923, xv, 468

Polycystic kidney in the newborn S. S. REBACKER Bull Soc d'obst et de gynéc de Par 923, xli, 307

Kidney stone A. D. BAY Surg Clin N Am 1923, ix, 903

Calcification in kidney stones D. D. PHILLIPS Ann Surg 923, lxxvii, 39

Certain features of renal calculi E. ELBO Jr Ann Surg 923, lxxvii, 5

Three cases of bilateral renal calculi C. NOOY Lancet, 923, ccv, 325

A case of silent calculous pyelonephrosis H. B. GOSWAMI Ochsner M & S J, 93, lxxvi, 66

Actinomycosis of the kidney A. D. BEVAN Surg Clin N Am, 923, ix, 890

Pathological changes in the kidney in congenital syphilis E. M. S. CAMPOS Bull Johns Hopkins Hosp Balt 1923, xxiv, 33

Stenosis of the contractility of the renal pelvis and the ureter A. LORRAZ Zschr f urol Chir 923, xv, 328 [579]

Leptothelium of the renal pelvis with the formation of an epithelial thrombus O. CONRAD Zschr f urol Chir 93, xli, 1

Pyelitis in infants and children G. E. JOHNSON J Lancet, 1923, xlii, 305

Chronic pyelitis or infected hydronephrosis A. BLOCK Zschr f urol Chir 93, xli, 9 [579]

Traumatic rupture of a hydronephrosis H. W. L. MORTON Lancet, 923, ccv, 24

Pyelography H. L. KRETSCHMER Surg Clin N Am 93, ix, 965

Embryoma of the kidney H. GAER and D. S. ADAMS Ann Surg 93, lxxvii, 26

Tumors of the kidney D. N. ERLANDER Surg Clin N Am 1923, ix, 1007 [579]

Adenocarcinoma of kidney in a child A. J. HOOK and H. ALPERT California State J Med 923, xli, 487 [579]

The diagnosis and surgical treatment of malignant tumors of the kidney W. E. STREYER J Urol 923, x, [580]

Necrosis of the right kidney from thrombosis of the renal vein nephrectomy recovery G. MAUROV J d urol mèd et chir 923, xv, 455

The diagnosis of surgical kidney lesions G. M. MYERS Colorado Med 923, xx

The surgery of the kidney W. E. LOWER Ann Surg 93, lxxvii, 50

Practical points of interest in embryology and their relation to kidney surgery G. V. A. BROWN Illinois M J 923, xlv, 33

Complications of nephrectomy R. PROBST Khmt schenka Med 923, 7 [580]

Animal experimentation in anastomosing the ureters at the gall bladder in obstruction of the bladder KUNT Beitr klin Chir 93, lxxvii, 657 [580]

Ureteral calculus R. H. HENNER Surg Clin N Am 93, ix, 1063

Calculus of the lumbar ureter SOCIETY Arch franco belge de chir 923, xxvi, 663

A simple treatment of certain lesions of the intravascular pter in the female E. J. HANVART J Urol 93, [581]

Method of procedure in treating wounds injuries of the ureter ALBERT Lyon chir 923, xx, 404

Bladder Uethra and Penis

Absorption from the urinary bladder F. C. MARY and J. A. H. MASON Ann J M Sc 1923, clxvi, 96 [581]

Food allergy as cause of irritable bladder W. W. DIXON J Urol 923, x, 73

Report of case of true hour glass bladder H. L. KRETSCHMER and H. L. MORGAN J Urol 923, x, 18

The treatment of intestino vesical fistula LACROIX J d urol mèd et chir 923, xv, 474

The value of diagnostic X-ray in neoplasms of the urinary bladder R. E. FRANK Therap Gas 923, i, xxxix, 549 [581]

Carcinoma in diverticulum of the bladder O. SCHWAB Zschr f urol Chir 923, xli, 47

Carcinoma of the bladder treated by radium needles inserted into the tumor mass through the vaginal wall R. H. HENNER Surg Clin N Am 93, ix, 1077

Carcinoma of the bladder J. B. DREYER and W. H. MACKENZIE Ann Surg 93, lxxvii, 54

Sarcoma of the bladder C. J. LOWE Colorado M J 93, xli, 23

Report of cases of malignant growths of the bladder treated by resection and radium H. C. BUCKNER J Urol 93, xli, 59 [581]

Genitourinary stricture and its complications in the male T. M. DOWDY Kentucky M J 93, xli, 49

Large urethroperineal fistula treated by mobilization and urethrorrhaphy M. J. LACROIX J d urol mèd et chir 1923, xv, 450

Papilloma of the posterior urethra; the cause of profuse hemorrhage and urinary retention. E. DAVIS. *Surg. Gynec. & Obst.* 9, 3, xxviii, 194.

The process and present-day treatment of strictures of the urethra. F. BRACK. *Arch. f. path. Anat.* 9, 3, cxviii, 37.

Plastic operations on the male urethra. H. JOSEPH. *Ztschr. f. urol. Chir.* 9, 3, xii, 58.

An epithelioma of the penis following phagedenic chancroid infection. N. K. FORESTER. *Urol. & Cutan. Rev.* 1923, xxv, 483.

Cancer of the penis. T. C. STELLINGMA. *Therap. Gas.* 9, 3, 3, xxxii, 345.

Genital Organs

The prostate and azoospermia. THOMAS DE LA MAZA. *Rev. esp. de ciruj.* 9, 3, v, 873.

Diseases of the prostate gland. T. M. DORSEY. *Urol. & Cutan. Rev.* 1923, xxv, 478.

Simple prostaticitis in old men. R. DANCET. *Rev. de chir. Par.* 19, 3, xli, 459.

Papilloma of the prostatic urethra treated with radium and hyperthermia. R. H. HERBERT. *Surg. Clin. N. Am.* 9, 3, li, 97.

The incidence of malignant disease in the apparently benign enlargement of the prostate. R. H. J. SW. *Proc. Roy. Soc. Med. Lond.* 9, 3, xvi, Sect. Urol. 7.

Deep X-ray therapy in the treatment of metastatic pain of carcinoma of the prostate. C. A. WATERS and J. W. PIERSON. *South. M. J.* 19, 3, xvi, 630.

On the surgical treatment of diseases of the prostate gland. E. S. JUDS. *Am. J. Surg.* 9, 3, xxxvii, 300.

Surgery of the prostate gland. J. H. GILKINSON. *Boston M. & S. J.* 9, 3, cxxxv, 189.

The closure of the suprapubic urinary fistula following suprapubic prostatectomy: observations on sixty-eight cases. H. P. R. HART. *Brit. J. Surg.* 9, 3, xii, 73.

Tuberculosis of the epididymis. B. R. MAXWELL and R. H. WALDENHUT. *Minnesota Med.* 9, 3, vi, 492.

Vasectomy or "Beidfeld" operation. R. FARZA. *Report de med. & chiruj.* 19, 3, xi, 344.

Vasectomy for seminal vesiculitis with description of a new and improved technique for the operation. F. KISS. *Lancet.* 9, 3, ccc, 213.

Ligature of the vas by epididymostomy in the treatment of sterility and degenerative conditions. K. KISS. *J. d. urol. med. et chir.* 9, 3, xv, 437.

The structure of the testes of the chimpanzee and the physiological results of their transplantation. E. KATZNER and S. VOSKOVITZ. *J. urol. med. et chir.* 1923, xv, 47.

The operative treatment of ectopic testes and its results. A. ZENO and L. A. IVERSON. *Rev. med. & Roma.* 9, 3, xxi, 55.

Miscellaneous

A history of the development of urology as a specialty. T. D. MOORE. *J. Urol.* 9, 3, 99.

Some things the general practitioner should know about urology. G. J. THOMAS. *J. Lancet.* 19, 3, xii, 371.

Urological ailments encountered by the general practitioner. B. A. THOMAS. *Internat. J. Med. & Surg.* 1923, xxvii, 333.

Hematuria. A. H. CHOWDER. *Urol. & Cutan. Rev.* 9, 3, xxv, 49.

Hematuria. J. J. BANERJEE. *Urol. & Cutan. Rev.* 9, 3, xxv, 435.

A note on the bacteriostatic action of urine after the testis shows administration of mercaptochrome to normal rabbits. J. H. HILL and J. A. C. COLEMAN. *Bull. Johns Hopkins Hosp. Balt.* 1923, xxxv, 230.

New germicides and antiseptics used in urological irrigation. J. T. BRUNN. *J. Med. Ass. Georgia.* 1923, xxi, 326.

Amputation in urinary surgery. F. CATHOLIN. *Arch. franco-belge de chir.* 19, 3, xvi, 670.

Absorption from the urinary tract. J. A. H. MURPHY. *J. Urol.* 19, 3, 67.

The caustic and moderate treatment of retention of urine in the male. W. K. LEWIS. *Pediatrics.* 1923, vii, 34.

Report of a case of schistosomiasis hematobium. J. PIERCE. *J. Urol.* 1923, x, 75.

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

Adjuvants and antagonists of bone nutrition. O. MONTGOMERY, P. MCKEL, and R. SAYTAS. *Pross. med. Par.* 1923, xxi, 697.

The conflicting properties of perosteum and bone medulla in the formation of bone. P. R. KATZENTRUP. *Prog. de la chm. Med.* 9, 3, xiv, 370.

Osteomyelitis. F. L. CHAMBERLAIN. *Internat. J. Med. & Surg.* 1923, xxv, 300.

Osteomyelitis. A. J. OCHTER. *J. Lancet.* 9, 3, xli, 384.

Acute osteomyelitis. L. A. McALPIN. *Verg. M. Month.* 19, 3, 1, 337.

Acute osteomyelitis. A. H. FORESTER. *Caedra. M. Am. J.* 9, 3, xii, 379.

The differential diagnosis of osteomyelitis. G. ROSEN. *Med. Klin.* 9, 3, xii, 749.

A case of osteitis deformans. P. B. ROSE. *Proc. Roy. Soc. Med., Lond.* 1923, xvi, Sect. Orthop. 40.

Metastatic tumors of bone. C. A. JOEL. *Br. J. Surg.* 9, 3, xi, 38.

The X-ray diagnosis of bone lesions. R. W. LOVETT. *Wacon. M. J.* 9, 3, xii, 123.

Röntgen ray study of non-traumatic periodontal bone lesions. R. G. GILES. *Am. J. Roentgenol.* 9, 3, x, 393.

Mycotic osteomyelitis localized in an area of necrosis. CHATON and CALLOU. *Pross. med. Par.* 19, 3, xxi, 381.

A case of multiple xanthoma bone granuloma in treatment. N. J. KONTROPOULOS. *Arch. f. Klin. Chir.* 9, 3, cccv, 73.

The nature of the so-called rheumatoid arthritis and osteo-arthritis. A. G. T. FARRER. *Br. M. J.* 1923, ii, 102.

Two cases of gonorrheal arthritis treated by intra-articular injections of antipneumococcus serum. A. VALL. *Bull. et m. Soc. de chir. de Par.* 1923, xix, 80.

A theoretical and practical contribution to osteitis. I. SCHNEIDER. *Ztschr. f. orthop. Chir.* 9, 3, xii, 39.

A case of congenital scoliosis. K. F. BARNER. *Edu. W. M. J.* 9, 3, x, 374.

Lesions of the lumbar spine and painful sacralization. E. AUGER. *Bull. et m. Soc. anat. de Par.* 1923, xxv, 401.

- The causes and prevention of deformities of the pelvis
B F BARRY J Med Soc N Jersey 9 3, xv 57
- Volkman's contracture. LECHE and HALLOPEAU
Bull et mém Soc de chir de Par. 9 3, xlix 3
- Bilateral congenital absence of the radius L P SPEARS
Kentucky M J 9 3, xxi, 407
- Habitual displacement of the ulnar nerve in cubitus
varus and valgus G SCHMIDT Zentralbl f Chir 9 3,
l, 474 [588]
- Synovial inflammation of the tendon sheaths of the
hands and feet as an occupational disease E SATTER
Arch f klin. Chir 9 3, cxxix, 59 [588]
- A specimen of synostosis of phalangeal joints congenital
(?) in origin W H OGDEN Proc Roy Soc Med
Lond 9 3, xvi, Sect Orthop 5
- A case of snapping hip B W HOWELL Proc Roy
Soc Med, Lond 9 3, xvi, Sect Orthop 46
- A case of pseudocoma in an adult G PERKINS
Proc Roy Soc Med, Lond 9 3, xvi, Sect Orthop 45
- Osteochondritis deformans juvenilis W SINGER M
wetter f Kinderheilk., 9 3, xxvi, 3
- Microscopic findings in juvenile arthritis deformans—
Legg-Calvé Perthes osteochondritis deformans juvenilis
crus—and comparative research concerning the epiphysis
of the head of the femur with particular reference to
the femur F J LANG Arch f path Anat 9 cxxxix
76 [589]
- Two cases of deforming osteochondritis of the hip one
case followed for eleven years and the other complicated
by congenital lumbar lymphosis ROBIN Rev d'orthop
1922, xxx, 220 [589]
- Acute osteomyelitis of the femur, vaccination spoints
new fracture, recovery and consolidation R GILLES
Bull et mém Soc de chir de Par. 9 3, xlix 993
- A polypoid giant-cell tumor of the femur H RO
VILLON Bull et mém Soc de chir de Par. 9 3, xlix
1017
- Unusual injuries about the knee joint P H KURT
Surg Clin N Am 9 3, iii, 7 [590]
- A clinical and anatomical study of a case of congenital
proximal humerus BOULAR and BOUYER Rev
d'orthop, 70 3, xxx, 245 [590]
- Concomitant arthritis of the knee failure of serotherapy
arthralgia cure with conservation of movement C
DUJOURN and M P WELLS Bull et mém Soc de chir
de Par 1922, xlix, 205 [591]
- Congenital club foot E D McBRIDE J Oklahoma
State M Ass 9 3, xvi, 5
- Coxsack's disease of the second metatarsal be the
result of chronic trauma O SCHMIDT Deutsche
Zeitsch f Chir 9 3, cxxviii, 145
- Kocher's disease of the tarsal scaphoid H H GREEN
wood Lancet, 9 3, cxxv, 74
- Juvenile deforming metatarsophalangeal osteochondri
tis P LARSEN J Am M Ass 9 3, lxix, 89 [591]
- Surgery of the Bones, Joints, Muscles,
Tendons, Etc.**
- An instrument to facilitate the making of suture holes
in certain bones P LARSEN J Am M Ass 9 3, lxix
20 [591]
- Scaphoid therapy in deforming diseases of the joints
H HART Deutsche med Wchnsch 9 3, xiv 684
- Discussion on arthroplasty at the International Congress
of Surgeons HAY GROVER, PUTIN MACACHELLO and
others Brit M J 9 3, ii, 14 [592]
- The artificial formation of sockets. The use of bone
grafts for temporary fixation H SEVERIN Zeitsch f
orthop Chir 9 3, xlii, 264
- The mobilization of ankylosed joints by operation
F D DICKSON J Missouri State M Ass 9 23, xx, 266
- A case of tendon transplantation B W HOWELL
Proc Roy Soc Med Lond, 9 3, xvi, Sect Orthop 50
- Operative fixation of the spinal column in tuberculous
spondylitis R STRAUSS Deutsche Zeitsch f Chir
9 3, cxxviii 313
- Total subperiosteal removal of the clavicle case of
osteomyelitis and regeneration of the bone HACOYER
Presse méd Par. 9 3, xciii, 276 [592]
- Four cases of clavicular contracture of the forearm treated
by muscle-shifting operation C M PAGE Proc Roy
Soc Med Lond 9 3, xvi, Sect Orthop 43 [592]
- Replacement of almost the entire radius by moved
graft P HALLOPEAU Bull et mém Soc de chir de
Par 9 3, xlix, 990
- Surgery of the phalanges S R MILLER Internat J
Med & Surg 9 3, xxxvi, 343
- Hamstring transplantation for quadriceps paralysis
P D COLONNA J Bone & Joint Surg 9 3, v 472 [592]
- Pseudarthrosis of the neck of the femur osteopneustic
grafting cure DUJOURN Bull et mém Soc de chir
de Par 9 3, xlix 354 [595]
- Cysts are treated by osteotomy of the femoral neck and
osteopneustic grafts P MALCHAIRE Bull et mém Soc
de chir d Par 9 3, xlix, 97
- Horizontal resection of the femoral condyles according
to LAEVEN KLIN. Med Klin, 9 3, xxx, 75
- The prognosis after removal of the semilunar cartilage
R J MCN LOVE Brit M J 70 3, ii, 324
- The operative treatment of hallux valgus on physio
logical basis H EVANS Arch f orthop Unfal
Chir 9 3, xii, 437 [593]
- Fractures and Dislocations**
- Some essentials in fracture work G H REED Vir
gows M Month 9 3, i, 325
- Extension with rust-proof steel wire F BAKER
Zentralbl f Chir 9 3, i, 463
- Non union fractures the massive bone graft M S
HIVENS J Am M Ass, 9 3, lxxxi, 463 [593]
- A treatment for greenstick fractures and for dislocations
of the clavicle W A FULTON J Lancet, 9 3, xlii,
383
- Bilateral fracture of the clavicle COTTELORE and
HAYEN Arch franco-belges de chir 9 3, xxvi, 695
- The operative treatment of acromio-clavicular disloca
tions P DISCONTE Bull et mém Soc de chir de Par,
9 3, xlix, 194 [594]
- The treatment of fractures of the upper end of the hu
merus J N BAKER South M J 9 3, xvi, 6
- The treatment of diaphyseal fractures of the forearm
C LARIVIER and J SINGLOUX Presse méd Par 9 3,
xciii, 717
- Compression fractures of the lower end of the radius
J H STEVENS U S Naval M Bull 9 3, xiv, 5
- An improved Jones extension arm splint J DENNIS
J Am M Ass 9 3, lxix, 547
- The treatment of dislocated semilunar carpal bones
G G D VON Surg Gyner & Obst 1922, xxviii, 5 [594]
- Epiphyseal separation of the ungual phalanx of the
thumb A M LORET Bull et mém Soc anat de Par
9 3, xciii, 427
- The general treatment of fractures, with special reference
to fractures of the femur E T NEWELL South M J
9 3, xvi, 608
- Fractures of the neck of the femur D EVZ, Sz. South
M J 9 3, xvi 606

A case of intracapsular fracture of the neck of the femur. R. C. ELSTREE. *Proc Roy Soc. Med. Lond.* 923, xvi, Sect. Orthop. 49.

Separated epiphysis of the lower end of the femur: two open operations. E. W. RYKHOV. *Berg Clin N Am.* 923, xl, 643.

The result of a suture of an old fracture of the patella followed by suture of the patellar tendon thirty-two years

later. WALTER. *Bull et méém. Soc. de chir. de Par.* 923, xlii, 203. [1925]

Fracture of the lateral head of the tibia with great displacement; osteosynthesis; early walking. G. LASSY. *Bull et méém. Soc. de chir. de Par.* 923, xlii, 105. [1925]

Isolated fracture of the tarsal scaphoid. H. MOVSON and F. D. ALLART. *Bull et méém. Soc. méém. de Par.* 923, xcvi, 400.

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels

Methods of demonstrating the circulation in general as applied to study of the renal circulation in particular. I. HIRSHAY. D. M. MORROW. and R. K. LEE. *Brown J Am M Am.* 1923, lxxv, 177. [1924]

Embolism, thrombosis and phlebitis, some personal experiences. D. P. MACCARTER. *Am J Surg.* 923, xcixvii, 97.

A case of pelvic aneurysm. E. NYLNER. *Zentralbl f. Chir.* 923, l, 865.

Abdominal aortic aneurysm. brief review of six abdominal aortic aneurysms in eight aneurysms located at 1,000 vertebrae. E. R. GRIVERT. *Kentucky M J.* 923, xii, 405.

A case of thrombosis of the aorta: secondary to reduced incarcerated hernia of brief duration. J. PHILLIPS. *Zentralbl f. Chir.* 923, l, 867.

A wound of the inferior vena cava. BOYNT. *Lyon chir.* 1923, xxi, 45.

Anomalies of the obturator artery and their surgical importance. L. STRECHT. *Rev de med y chir de la Habana.* 923, xcixv, 352. [1924]

Arteriovenous aneurysm of the thigh. A. V. VOT. A. PARCILLER and L. MASEL. *J de med de Bordeaux.* 923, xcix, 445.

The use of physiotherapy in intermittent claudication. A. FLEURY. *Wissenschaftliche Dylo.* 922. [1927]

A uncommon case of multiple aneurysms of the limbs. G. CARCARELLI. *Ann ital di chir.* 923, x, 325.

Blood and Transfusion

Blood and serum examinations immediately before and after roentgen irradiation. I. HILZFIELD and H. R. SCHERER. *Strahlentherapie.* 923, xv, 84. [1927]

Hemorrhagic complications following the use of bismuth salts. M. ARAKOV. *Arch. de med., chir., y especial.* 1923, xl, 22. de la acad. méém. quinqu. espal. 379. [1927]

Hemorrhagic purpura. H. Z. GERTY and J. K. HOSLOW. *Med Clin N Am.* 923, vii, 21. [1927]

A new method for accurately determining the clotting time of the blood. M. F. FETTERSON and C. A. MILES. *Arch. Int. Med.* 923, xciii, 55. [1927]

Regarding the existence of more than two erythrocyte groups in human blood. C. G. GUTERREZ and J. G. HICK. *Bull Johns Hopkins Hosp.* Balt. 923, xcixv, 35, 36, 37. [1925]

A review of professional donors. H. Z. GERTY and J. F. HARVEY. *J Am M Am.* 1923, lxxv, 177. [1924]

Transfusion of whole blood. L. J. J. GYALOGA. 923, xciii, 50.

A critical method of blood transfusion derived to men avoid post transfusion reactions. F. W. LESTY. *Can. clin M Am J.* 923, xii, 379. [1924]

Local asphyxiation following blood transfusion. G. L. CARLTON and W. E. LEE. *Ann Surg.* 1923, lxxvii, 199.

Prolonged intra-cerebral infusions and the causal determination of venous pressure. W. G. FETTERSON and D. T. LESTY. *Arch. Surg.* 1923, vii, 199. [1924]

Hypertension and surgery. O. JEANVIER. *Rev de chir. Par.* 1923, xlii, 458.

Lymph Vessels and Glands

Elephantiasis: causal review and an attempt at experimental reproduction. G. D. MAROV. *Am J M Sci.* 923, clix, 575. [1924]

Surgical cure in case of elephantiasis of the lower extremity. L. DE GUAYO. *Ann ital di chir.* 923, x, 685.

SURGICAL TECHNIQUE

Operative Surgery and Technique; Postoperative Treatment

Autoplasty with the use of skin flaps with long pedicles. L. GERTY. *Bull et méém. Soc. de chir. de Par.* 923, xlii, 105. [1925]

The combined physico-surgical treatment of keloid keloidosis. Deutsche med. Wochenschr. 923, xlii, 260. [1927]

Postoperative tetanus. Also contributes to the causation of congenital myotonic defects and extensive reactions of the small intestine. K. WOLFF. *Arch. f. klin. Chir.* 1923, cxcviii, 400. [1927]

Is diaphragm (pleural) lacteal agent against postoperative pulmonary complications? W. J. L. 100. *Deutsche Ztschr. f. Chir.* 923, xcixv, 36. [1927]

A therapeutic Surgery; Treatment of Wounds and Infections

Curettage treatment—an improvement in adjusting the tubes in superficial wounds. H. LILIENTHAL. *M. Bismarck.* 923, lxi, 16.

Polyvalent antiseptics action. A. SORDILLI. *Rev. Assoc. méém. argent.* 923, xcixv, 83.

Blood concentration changes in extensive superficial burns and their significance for systemic treatment. F. P. UNDELL, G. L. CARLTON, R. KAPLAN, O. T. PACE, and others. *Arch. Int. Med.* 923, xciii, 3. [1927]

Specific non-specific therapy of staphylococcus. K. KOCK. *Deutsche med. Wochenschr.* 1923, xlii, 678.

The treatment of tetanus. M. CARLTON. *Oral. bel.* 1923, lxxv, 3. [1927]

Anesthesia

- The use of caffeine in solutions for spinal anesthesia
ALAMASTIK. Lyon chir 19 3, xx, 363
Death following anesthesia of the nervus mandibularis
M. REICHMANN. Vierteljahrsschr f Zahnheilk 933,
xxviii, 57

Regarding the technique employed to induce trunk
anesthesia of the supra maxillary nerv. by the post
ner palatine duct J. U. CARRERA. Semana med 9 3
xxx, 744

Observations on anesthesia, with report of 300 con-
secutive cases. B. RANOFF. Boston M & S J 933
cxxxix, 69

PHYSICO-CHEMICAL METHODS IN SURGERY

Roentgenology

- Röntgen-ray stereoscopy R. KROGER. Arch Radiol
& Electrotherapy 933, xxviii, 65
The stimulating and paralyzing effect of the X-rays. W.
E. SCHALL. Arch Radiol & Electrotherapy 9 3, xxviii,
114
Observations on X-ray cancer. J. H. DIBBLE. Arch
Radiol & Electrotherapy 933, xxviii, 65
Twenty century advances in cancer research. E. F.
SMITH. J Radiol 933, iv, 305
X-rays and X-ray apparatus—an elementary course
J. K. ROSENTHAL. J Radiol 9 3, iv, 336

Biological reactions of X rays: effect of radiation on the
nitrogen and salt metabolism. C. F. COHR and O. W.
PLOSCH. Am J Roentgenool 9 3, x, 736

Miscellaneous

- A question of size. W. J. MA. O. Ann Surg 9 3,
lxxviii, 140 [603]
The results of diathermy. C. A. CAST. No and J. T. M.
GONZA. Semana med 9 3, xxx, 803 [606]
The physiological effects exerted by high frequency cur-
rents. F. DE LAHART. N York M J & Med Rec 9 3
cxcviii, 347

MISCELLANEOUS

Clinical Entities—General Physiological
Conditions

- The septic factor in the three great plagues. W. J.
MAYO. Canadian M Ass J 9 3, xiv, 540 [607]
Coincidence of two tumors in the same person: hyper-
nephroma and psammatic epithelioma. PIETTE. Bull
et mèm Soc anat de Par 933, xcvi, 508
Carcinogenic components in the tar of Heidelberg gas
works. TEUFELBAUMER. Ztschr f Krebsforsch 9 3,
xx
Further research on the relation of carcinoma to infec-
tion. W. M. F. ROBERTSON. Lancet, 19 3, ccv, 336 [608]
Treatment of cancer. BOUDREAU. J de méd de Bor-
deaux, 9 3, xciv, 316
Studies in experimental traumatic shock. VIII. The
influence of morphine on the blood pressure and alkali
reserve in traumatic shock. M. CATTILL. Arch Surg,
933, vii, 96 [609]
An electrochemical interpretation of shock and exsangu-
ination. G. W. CHALK. Surg Gynec & Obst 9 3,
xxviii, 343.

A case of acromegaly: thymic glandular insufficiency
J. CAUWENBERG. J de méd de Bordeaux, 9 3, xciv, 444

General Bacterial, Mycotic, and Protozoan
Infections

- Actinomycosis. H. A. BRUCE. Ann Surg 9 3, lxxviii,
394
Distribution of actinomycosis in the United States
S. H. SAVITZ. J Am M Ass 9 3, lxxxi, 655

Surgical Pathology and Diagnosis

- Cellular immunity and susceptibility to disease. A.
TEUFELBAUMER and H. RUTGEN. Deutsche Ztschr f Chir
9, cxcviii, 78
The cytologic diagnosis of neoplasms. W. C. MAC
CARTY. J Am M Ass 9 3, lxxxi, 59 [608]

Medical Jurisprudence

- Responsibility of the surgeon in the after-care of frac-
tured bones. Huber vs Hamley. Pac, p 769 [609]

INDEX TO SUBJECT MATTER

- ABDOMEN** Intrathoracic catastrophes simulating acute, 2, prevention of peritoneal contamination in drainage of abscesses m. 4, chronic 43, preperitoneal and retroperitoneal root 1, subphrenic b. acute typical operation 43, subdiaphragmatic abscess, 43, 340, primary retroperitoneal sarcoma 44, value of measurements of in recognizing size and nature of tumor 140, importance of physiography in recognizing causes of obscure symptoms in 263, acute disturbances in all of in appendicitis, 340, drainage in infection of 36, subhepatic abscess secondary to appendicitis, 460, endometrial adenoma of all of following ventresuspension of tumor 467, postopera. in central hernia, 340, three unusual abdominal cases 568
- Ureter** Prevention of peritoneal contamination in drainage of abdominal, 4, subdiaphragmatic 43, 340, preperitoneal and retroperitoneal root 1, subphrenic as typical operation, 143, descending retrocrural with phlegmon of neck and threatening mediastitis treated by external operation through scolar route and prophylactic collar mediastotomy 430, subhepatic secondary 1, appendicitis 40, new method of treating subhepatic and other 46, pericystic, appearing first on left side and after interval of year on right side 478, brain due to obtuse infection, 541. See also names of organs and parts
- Uterus** Following thyroid operations, 437
- Uvula**, Retention of to nitrogen retention in spermatozoa 63
- Acromioclavicular dislocation**, Operative treatment of 594
- Actinomyces**, Diagnosis and treatment of 84
- Adhesions** Following gynecological laparotomies 37
- Adrenal**, Roentgenological observations on treatment of epilepsy with intensive irradiation of, 54, 67, acute bilateral hemorrhage of 26, effects of suprarenal injury on interstitial cells of ovary and on tubules and interstitial cells of testis 476, tumors of 476, cyst of suprarenal capsule removed by operation 476, atropation of one suprarenal gland because of suprarenal arterial gangrene 577
- Aortic Intracranial**
- Aphidius**, Iso aphidius before and after ether an anthesis 26, importance of spleen in production of 36
- Ureth**, Rebuilding of by bone transplantation 470
- Aneurysms** Produced by quinine, 24
- Amblyopia** Produced by quinine, 4
- Urethral fluid**, Use of in treatment of cancer 57
- Amputation**, Choice of site for with reference to subsequent prosthesis 50
- Intestine**, Structures of small intestine in peritonitis 1, psychic disturbances after splenectomy in pernicious 43, relation of cholesterol content of blood to spleen function, 78, clinical and pathological study of splenic, 465, effect of blood transfusion on return of peritonitis, 53
- Anesthesia**, Regional, of neck and upper extremity, arterial pressure in different types of 77, induced by freezing of nerves 77, blood-nerv determinations in cases of operation performed under local, and ether 77, supra umbilical spinal, 78, spinal and local, in
- Aquila Hospital** 78, para arterial nerve block, in general surgery 78, splenic 78, 50, 1, and practical method of draining scrofulous morphine in obstructions 54, cross-section under local 56 of brachial plexus 67, research on electric aneurysm, 7, no agglutination before and after 28, theory of aneurysm 28, action of pure ether in inducing 28, cross-section under spinal, induced with tropacocaine 171, effects of vaginal trauma during 50, thyl chloride 1, in minor operations on children 50, local an. dya ant. in anal. then perities 43
- Aneurysm** Cerebral 53. See also under Artery
- Anemia** pectoris, Surgical treatment of 30
- Angiospasm** in pathogenesis of somatortrophic neurones and its treatment by periaxillary sympathectomy 37
- Ankle** Arthrodosis of 30, treatment of nail by panes trapped arthrodosis, 30
- Ankylosis** Prevention and treatment of fibrous 374. See also names of joints
- Anthrax** Treatment of cutaneous 83
- Antrum of Highmore**, Infection and inflammation of in eruptive trismus of teeth and their relation to nasal lary sinus 8, delayed flap in secondary operations on palate and 340, etiology and treatment of nasal lary sinusitis 434
- Ureter** Treatment of reffer 67, crises of cured by ureteral catheterization 478
- Ureth** Gonorrhea of and rectum 474
- Aorta**, Calcareous degeneration of dorsal and lumbar as cause of backache 496
- Appendectomy**, Cause of pain frequently persisting after 38, chronic appendicitis and, 35
- Appendicitis**, Typical forms of obstruction of small intestine following suppuration 3, treatment of, with combinations 36, suppurative arthritis associated with 24, polymyositis tuberculous and, 37, in children 14, years of age and under 245, reciprocal relationship bet. cca. in female and inflammation of right adnexa 30, men's disturbances in abdominal all in 340, cat. gangrenous or perforative and suppurative retrocecal, 300, chronic, and appendectomy 35, subhepatic abscess secondary to, 460, fat reactions in and cholecystitis, 557
- Appendix**, Carcinoma of, 36, role of in masquerade 244, clinical report acc. of chronic changes in discovered by roentgen ray 340, sliding hernia of caecum and, in children 340
- Unguit**, Bacterioid power of 53
- Arm**, Development of interosseous ligament in, 4, choice of site of amputation of 50, orthopedic surgery of upper extremity 470, flexion contracture of treated by muscle sliding operation, 50. See also parts of arm
- Ureter** Treatment of ulcerative stomatitis by intra caecal injection of 330
- Arphenanthramine**, J. uridine due to simulating labary duct obstruction 46, in treatment of spirochetic granulitis 330, acute ascending meningitis possibly due to 334
- Arteriosclerosis**, Significance of vascular and other changes in retina in, and renal disease 33

Artery. Abnormalities of right hepatic, cystic and gastroduodenal, 30, thrombosis of mesenteric, 296 pharyngeal aneurysm of lateral carotid, 73 operative treatment of embolism of large, 277 results of ligation hepatic, 354 stenosis of common iliac, treated by gradual occlusion by free graft of nerve, 393; anal only, clinical aspects, and treatment of aneurysm of superior mesenteric, 306 ligation of common iliac, with fascial strip for anastomosis, 496 true spontaneous aneurysm of left common carotid, cured by total extirpation, 406, anastomosis ligation of cist and 497 anomalies of obturator and their surgical importance 506. *See also* Blood vessels

Arteritis. Development and end results of osteochondritis deformans of hip and its relationship to deformans, 46, suppurating simulating acute appendicitis, 24, influence of *serpens subiecti* upon, of rabbits inoculated with non hemolytic streptococci, 70, roentgen gastro-intestinal studies in chronic deformans 487 nature of so-called rheumatoid, and osteo-arthritis 525. *See also* Joints and joints of joint

Arthrodesis. Of ankle 36 (posttraumatic) as treatment of flat ankle, 39

Arthroplasty. Discussion on, at International Congress of Surgeons, 59

Articular obliterans, Sacro-iliac, 337

Atia, Occlusion of, 63

Atropine, Diagnostic also of pyloric reactions 35

Autonomic embolism in atherosclerotic aorta 326

Autoplasty with use of skin flaps with long pedicles 60

Autotransfusion 409

BACKACHE Causes of chronic 405 calcareous degeneration of dorsal 1 lambar spine as cause of, 496

Bacteria. Influence of intestinal, on thyroid gland, 9

Spermatids on bactericidal action of violet 28

385 permeability of intestinal mucosa to crystals

types of determined by cultures from thoracic duct

347 bactericidal power of argemol, 53

Bacteriostatic Mechanisms of, 337

Basal metabolism. Relation of to thyroid disease 4

permissible breakfast prior to measurement of 428

Basal metabolic disease. See under Fever

Bile. White in common duct 30 bacteriological study of

obtained by non surgical drainage 247 detection of

biliary and pancreatic secretions by pepsin-pancreatic

secretory complement of guinea-pig-intestines, or gas

tristomy 345 pathology of haemia, and report on

polychloia 35 enteroleptic correlation of pigment 333

images in caused by pressure obstacle to secretion 353 studies on and biliary diseases 464

determination of salts in blood, 464 influence on

secretion of of administration of fluids peripancreatic

of internal secretory glands and drains 550

Bile duct, White bile in common duct, 30 identification of

common duct in presence of anomaly of 30, anomaly of

in factor in cholecystitis 39 excursions of liver and

38, abnormalities of 39 anastomosis pseudo

simulating obstruction of 346 experiences with non

surgical drainage of 247 bacteriological study of bile

obtained by non surgical drainage of 247 surgery of hepatic and common ducts 583, stone in common and hepatic ducts, 593 election of cases for medical drainage of gall tract, 55 secondary operations in biliary system, 595

Banquets post. Pulmonary embolism following filling of stomach with Beck's, 136

Bleeding salt. Haemorrhage following use of 307

Bladder. Partial spontaneous involution of diverticulum of,

with diathermy alone 71 hemorrhagic prostatic of,

7 treatment of tuberculosis of 7 treatment of

cancer of by radium implantation, 7 diathermy in

treatment of tumors of lower urinary tract, 73,

new method of applying radium through cystoscope

73 disposition of uric acid in certain abnormal con-

ditions of, 39 anastomosis of 30, management of

bleeds, after operation and during pregnancy 51

perineal and pelvic cellulitis after certain cystos-

copies or suprapubic prostatectomies, 464 diverticula

of in children, 506 cystodermoid of, 335 treatment of

epithelial tumors of 375, treatment of carcinoma of,

377 precancerous and early cancerous lesions of,

377 lesions of in infancy 495, total cystectomy for

carcinoma of, 479 pyelitis of 470 operative treat-

ment of diverticula of, 479, anastomosing uric acid

into gall bladder in calcification of, 580, value of diathermy

\ ray in neoplasms of, 53 malignant growths of,

treated by resection and rubric, 53 absorption

from, 53

Blood. Chemical changes in, of dog after 59 long abstar-

tion, 3 chemical aspects of loss of in labor 66

sugar in, in cases of operations performed under local

anesthesia and ether anesthesia, 77 change in,

following splenectomy, result of beginning disrup-

ture of internal secretion, 247 bleeding and compen-

sation in first week of life, 360 cholesterol content of,

in anemias and its relation to spleen function, 78,

influence of different varieties of guttae on, 334

effect of total removal of liver after pancreatectomy

on sugar content of 354, effect of splenectomy on

hemopoietic system of matured felines 361 new

physiology of in porphyria cutanea tarda of boars and

jeffs 363 intravital course of hemolysis 367 re-

lation of tritane bacilli in digestive tract in tritane

salivaria in, 397 hydrogenation concentration, alkali

reserve sugar and non protein nitrogen of following

dog roentgen ray therapy 369, bile salts in, 454

hemostatic capabilities of 490 roentgen absorption

in and extracorporeal irradiation of, in treatment of

cancer 304 chloride, carbon dioxide and urea con-

centrations in following pyloric occlusion, 350, new

method for accurately determining clotting time of,

397 examinations of immediately before and after

roentgen irradiation 507 changes in concentration

of, in extremities superficial burns and their significance

for systemic treatment, 601. *See also* Circulation,

1 myelocytes Leucocytes

Blood pressure. Arterial pressure in different types of

anesthesia 77 influence of morphine on, in transverse

abdom, 608

Blood transfusion, Variation in blood groups, 25 in mal-

nured and infantile atrophy, 59, equality plasma

used in, 66, by citrate method in hemorrhage of

newborn, 600 from nonhuman donors, 577 hemor-

rhage induced by 78 through subcutaneous vein in

hemorrhage of newborns, 578, and development of

shock from, 307 intraperitoneal, with citrated blood,

397 results of attempts to induce hemophoretic

groups, 498 gravity method of 498 chemical and op-

erimental research on, 406, x-ray-transfusion, 499,

- Cartilage Value of transplants of in correction of nasal deformities, 7 133, deformations of resulting from grafts of fixed tissue, 483
- Cataract, Factors of safety in operation for of unusual results of operations for 6 extractions and complications, 3 treatment of each operation in acute lens, 3 3 anterior perception in advanced 3 3 slit lamp studies of lens of vitreous and its relation to operation for 330 removal of under ultraviolet light, 53
- Celastrol Prosthetic value of in depressed nasal deformities, 433
- Cerebellum, Cause of tumor of, that gave negative results to tests of labyrinth 8 See also under Brain
- Cerebrospinal fluid, Alterations in currents and absorption of following salt solution filtration, 25 leakage of after lumbar puncture and its treatment, 3 space compensating function of and its connection with cerebral lesions in epilepsy, 34
- Chest New growths in 4 intrathoracic catastrophes surrounding acute abdomen 8 primary neoplasms in, 49
- Chin Plastic repair of skin defects of 3
- Cholecystectomy Transverse section of three quarters of circumference of common duct in 56 effect of cholecystectomy and on secretory function of stomach and duodenum 56 end results of and cholecystectomy from standpoint of postoperative complaints, 56 care of stump after 56
- Cholecystitis Risk factor in pathology of 30 and its complications, 140 vaccination of pneumococci with, and gall stones, 4 fat reactions in appendix and 157
- Cholelithiasis End result of cholecystectomy and, from standpoint of postoperative complaints 56 Choleliths See under Bile duct
- Choleliths See Gall stones
- Cholesterol content of bile in animals and its relation to splenic function, 77
- Chorioiditis fetalis See Ricketts
- Choral plexus Rejection of severe unilateral internal hydrocephalus 33
- Circulation Traumatic shock studied by crowd, 256 coil test in portal system 46 methods of decompression in general as applied to renal, in particular 596 See also Blood
- Cistern magna Tumor in, 1 procedure of
- Claudication, Use of physiotherapy in intermittent, 597
- Clavicle, Treatment of fracture of due to indirect violence 71 total subperiosteal removal of in osteomyelitis followed by regeneration, 90
- Cleft foot Lindbergh operation for bilobed valves and hollow 67
- Cleft palate, Use of delayed flap in secondary operations on palate and nostrum 330 surgery of 333
- Colditz, Pathogenesis of mucocutaneous neurocystopathy 57 surgical treatment of ulcer in 137 459 556, 557 mechanism of nervous 45 infections, 459 diastolic enzymes in chronic ulcerative 557
- Coleis, Pathogenesis of mucocutaneous neurocystopathy 37, roentgenological signs of cancer of 243 congenital ectopic distention of 243 abnormality of function of ascending colon, 245 anastomosis of, in ileocecal invagination, 439
- Colostomy Modification of Lumbert's, 598 Common duct See under Bile duct
- Conjunctiva Metastases of, 4
- Conjunctivitis of anophthalmic origin 97
- Connective tissue, Changes produced by roentgen rays in inflamed, 30
- Connell stitch, Procedure to facilitate erection of, 334
- Constipation Treatment of spastic, 135
- Contracture Origin of mechanism, 44 treatment of Volkmann's contracture, 48 Deposition of pulsed ions 335 flexion, of forearm treated by muscle-aiding operation, 493
- Cornea, Epithelial cyst of 107 treatment of cornea 3 3 keratoplasty surgery and experiments in keratoplasty 31 removal of in industrial occupations, 330
- Corn plaques, 45 causation of 37
- C ribs, Results of orthopedic treatment of tuberculosis 37
- Cretinism, Prophylaxis of endemic goiter and, 5
- Crista ampullaris Structure and function of, 3 5
- Cubitus arum, Traumatic, 43 lateral displacement of ulnar nerve in, 43
- Cubitus valgus Habitual displacement of ulnar nerve, 35
- Cystectomy Total, for carcinoma of bladder 479
- Cystic duct See under Bile duct
- Cystitis, Rapid cure of, in children 71
- Cystoscopy New method of applying cystoscopy through, 73
- Cystoscopy Perineural and pelvic cellulitis after, 365
- Cysts, Traumatic epithelial, 4
- Cystostomy Pathologic reaction of, liberated in pregnancy 349

DACRYORHINOCTOSTOMY Combined methods for 5

Dacryocystitis Pathological and clinical aspects of 5

Dacryoma Treatment of defects bearing by small doses of X rays 6

Diabetes Treatment of gangrene due to, 403

Diaphragm, Hernia of, 30

Dialysis 1 treatment of tumors of lower urinary tract, 73 surgical, in treatment of carcinoma of prostate, 10 in surgery of, in relation to irradiation, 402 for malignant diseases of mouth, pharynx, and nose, 435 primary carcinoma of female urethra treated by 57 results of 404

Diet during pregnancy 360

Digestion, Changes in, after operations on stomach and intestines 10 nervous mechanism of functional disorders of 43

Depression as prophylactic agent against postoperative pulmonary complications, 607

Diphtheria Report of cases of 7

Dysuria, Failure of to affect rate of development of by drosophylla 374

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

Dysuria, Question of after thyroidectomy 336, in intra-abdominal infection 36

- 55 Intermittent obstruction of in children, 554
diverticula of 554 reaction of, 555 ulcer at papilla,
555 surgical treatment of obstruction of due to gall-
stones, 60
- Dura Repair of defects in by free transplantation of
fatty tissue, 7
- Dysenterobiosis, Practical management of 363 intrac-
363
- Dyspepsia, Diagnosis in chronic 34 new test for pas-
sive efficiency as aid to diagnosis of obscure 358
nervous mechanism of hypertonic and hypotonic, 45
- Dyspnea and epilepsy 44
- Dystonia, Recognition and management of functional, in
skeletal pt es, 65
- E**AR Management of discharging, in children, 6
therapeutic problems of acute infection of middle
6 headache from standpoint of otologist 69
acute poisoning of middle 7 vulnerability of path-
ologic, to small differences of loudness and pitch
7 otitis media, 44 mechanism of pain in
otological cases, 53 brain abscess due to otitic
infection, 54
- Eclampsia, 53 indications for and methods of artificial
interruption of pregnancy in, 64 prophylactic treat-
ment of 54 haemorrhages in nerv. centers in 4 3
etiology of, 574 symposium on treatment of 574
- Fibros Treatment of fluid, by new operation of arthrodesis
490
- Electroly Early and late lesions due to 506
- Electronuosis, Experimental research on 7
- Elephantiasis, Results of Kondeleia operation for 5
clinical review and attempt t experimental repro-
duction of 600
- Embolectomy I treatment of circulatory disturbances
in extremities, 54 cases of 497
- Embolism, F. I., 69 operative treatment of of large
arteries, 77 pulmonary following filling of fistula
with Beck beneath part 366
- Femur, Treatment of aseptic abscess of li er th 57
- Employer Physician, right t sue for services performed
at his request for employee not affected by compensa-
tion la 70
- Femora, Radical operation for chronic 3 anal us of
cases of, in relation t treatment 538 also of
immediate resection of rib in, in first t, cure of lif
339
- Encephalitis, Specific serum treatment of epidemic 438
- Encephalography, 54
- Enfermedad, Chronic, 46
- Laocrine glands, I experimental basis of endocrine ther-
apy 507 influence on secretion of lobe of parotid
of internal secretory glands 550
- Enterostomy, Value of, in intestinal obstruction, 240
- Erythema, Rhodanal, in chronic ulcerat cobitis 557
- Epididymectomy in genital tuberculosis 74
- Epididymis, I epididymectomy for tuberculosis of 74
operative treatment of tuberculosis of 75 4
different tion bet een tuberculosis and non tuber-
culous inflammation of 490
- Erythema Development of non gonorrheal 540
- Erythema, C. t of pre-circumcised features,
- Erythema Surgical treatment of treatment of th
internal irradiation of on salivary gland treat-
ment of by roentgen rays, 7 prevention and cure
of traumatic, by repair of dura by fatty tissue 7
dyspnea and epilepsy, 44 pleural, 44 treatment of
cervical by injecting alcohol into motor centers
54 relation of epac compensatory function of
cerebrum and cerebellum lesions in 5
- Epiphyses, Precocious ossification of and its relation t
choondrodysplasia fetalis 47
- Epithelium, Traumatic epithelial cysts 8
- Ergot Value of in obstetrical and gynaecological practice
26
- Erythrocytes Sedimentation of and pretation 49 in
hereditary of specific no agglutinable substances of
506 permanent polycythemia follo ing removal of
spleen 495
- Ether Blood sugar determinations following anesthesia
reduced 116, 77 anesthetic action of pure 5
no glutinins before and after anesthesia induced
with 8
- Ethmoid New technique for positive identification of,
cells practical considerations of ethmoid-phenoidal
sinusitis 5 8 sarcoma of 434
- Libyl chloride as anesthetic for minor operations on
children 90
- Exercise Effects of physical on menstruation, 470
- Exhaustion Physical trauma and 8
- Exophthalmos Unilateral 3 caused by non suppurat-
ca errors arising thrombosis 470
- F** Importance of radiography in doubtful cases of
trophy of 3 headache from ophthalmological stand-
point t tumors and cyst arising near part of orbit,
4 lesions of of nasal origin 4 transfer of function of
muscles of diminishing accommodation artificial-
ly produced 5 toxicologic spect of disease of 04
anesthetic reflex manifestations between and teeth,
06 injections of milk treatment of 06 neurofib-
roma of orbit 09 diagnosis 4 neuritis of due t
virus disease 09 significance of tolterelin reaction
tuberculosis of 3 ethmoidal t ad of neuroph-
thos of 6 care required of hospital in treatment
of 5 congenital anomalies of and confusion with
acquired conditions, 309 cavernous angioma of
orbit 3 endothelioma of orbit, 3 t beruloma
of orbit, 3 orbital edema as related t nasal
sinusitis 470 topics alaritis th venous t 43
local anesthesia as adjunct in therapeutics of 53
disease of retinal vessels and early signs of arterio-
sclerosis of 53 See also names of part of 53
diseases and operations
- Eyelids Alopecia and poliosis of the eyelids 7
- F**ALLOPIAN tube Primary carcinoma of 70 recipro-
cal relationship bet een pyelitis in female and
inflammation of right salivary 50 radiation of pain
in lesions of 567 primary epithelioma of 470
embryonata and mixed tumors of 470 radiography
of closed 70 invagination of testes and 370
- F** Repair of defect in dura by free transplantation of
7 embolism, 69 ablation of bone ca ties in
brovic osteom ritus by free transplantation of 470
ischemic necrosis of 506 reactions in pyelitis
and cholecystitis 557
- Fecundation, Investigation of effect of radiation of ovi-
cytes on, 73
- Femur Fractures of in children, 424 new method of
treating fractures of neck of 404 pseudarthrosis of
neck of treated by osteoperiosteal grafting, 525
See also Hip
- Fetus Value of abdominal ex-crement in recognizing
size 1 maturity of 45 urinary tract of 160
effects of irradiation on development of 69
- Fever Effect of stomach cause of 35 role of in
diagnosing fever 19 rectum of 70
- Fibula Treatment of Dupuytren fracture by screw 22
internal malunion, 5
- Fluorid Soapage, 7

1. The first part of the report is a general description of the project and its objectives. It includes a brief history of the project and a statement of the problem being studied.

2. The second part of the report is a detailed description of the experimental methods used. It includes a description of the apparatus used, the procedures followed, and the data collected.

3. The third part of the report is a discussion of the results of the experiment. It includes a comparison of the results with previous work and a discussion of the implications of the findings.

4. The fourth part of the report is a conclusion and a list of references. The conclusion summarizes the main findings of the experiment and the references list the sources of information used in the report.

5. The fifth part of the report is a list of figures and tables. These are included to provide a visual representation of the data and to facilitate comparison with other work.

6. The sixth part of the report is a list of appendices. These are included to provide additional information that is not included in the main body of the report.

7. The seventh part of the report is a list of acknowledgments. These are included to thank the people who have helped with the project.

8. The eighth part of the report is a list of references. These are included to provide a list of sources of information used in the report.

9. The ninth part of the report is a list of figures and tables. These are included to provide a visual representation of the data and to facilitate comparison with other work.

10. The tenth part of the report is a list of appendices. These are included to provide additional information that is not included in the main body of the report.

11. The eleventh part of the report is a list of acknowledgments. These are included to thank the people who have helped with the project.

12. The twelfth part of the report is a list of references. These are included to provide a list of sources of information used in the report.

13. The thirteenth part of the report is a list of figures and tables. These are included to provide a visual representation of the data and to facilitate comparison with other work.

14. The fourteenth part of the report is a list of appendices. These are included to provide additional information that is not included in the main body of the report.

15. The fifteenth part of the report is a list of acknowledgments. These are included to thank the people who have helped with the project.

16. The sixteenth part of the report is a list of references. These are included to provide a list of sources of information used in the report.

17. The seventeenth part of the report is a list of figures and tables. These are included to provide a visual representation of the data and to facilitate comparison with other work.

18. The eighteenth part of the report is a list of appendices. These are included to provide additional information that is not included in the main body of the report.

19. The nineteenth part of the report is a list of acknowledgments. These are included to thank the people who have helped with the project.

20. The twentieth part of the report is a list of references. These are included to provide a list of sources of information used in the report.

- Hallux valgus**, Cause of 48. Lodioli's operation for and hollow claw foot, 167. operative treatment of 49
- Hamstring**, Transplantation of for quadriceps paralysis, 593
- Hand**, Certain phases of surgery of, 48. Dupuytren's contraction of palmar fascia, 385. synovial inflammation of tendons sheaths of, as occupational disease, 588
- Head**, Operation for complicated, surgery of 533
- Head F's** of those suffering injuries of, 21. old injury of, 21. See also names of parts of head
- Headache**, From ophthalmological standpoint, 3, from standpoint of rhinologist, 7 from standpoint of otologist, 99, of sinus origin, 433
- Hearing**, Effect of pressure changes in external auditory canal on, 3, 4
- Heart**, Operation in wounds of 56. unusual metastases in, in melanocarcinoma, 30. disorders of accompanying esophageal gaster 437. cardiostomy and alveolotomy for mitral stenosis, 450. pregnancy and disease of, 471. in esophageal gaster and adenoma with hyperthyroidism, 535
- Hemithyroid**, Indications for extensive, 40
- Hemistomy**, Recognition of, in general practice 5
- Hepatectomy**, Partial, for adenoma, 46
- Hepatitis**, Cholelithiasis, hydrops of gall bladder and, 246. importance of pain in tertiary 357
- Hernia**, Inguinal, in male 27. operation for radical cure of femoral, 27. treatment of gangrenous femoral, 34. clinical aspects of eventration of diaphragm 36. diaphragmatic, 36. living sutures in treatment of 45. postoperative ventral, 549
- Herpes zoster ophthalmicus**, 43
- Heterophoria**, 95
- Hip**, External rotation of leg in diseases of 46. development and end results of osteochondritis deformans of and its relationship to arthritis deformans 46. operative treatment of dislocated, 5. hydatid cyst of 65. congenital luxation of in hemiplegic girl 68. results of orthopedic treatment of tuberculous coxitis, 27. end results of non-operative treatment of congenital luxation of, 274. transference of crest of ilium for flexion contracture of, 357. late results of reduction of congenital dislocation of 494. deform ing osteochondritis of followed for eleven years 589, deforming osteochondritis of complicated by congenital lumbar kyphosis, 589. See also Femur
- Histamine**, Studies of effect of on human gastric secretion, 30
- Histologic sections**, Rapid technique for preparing by paraffin method, 84
- Hormone**, Question of gastric, 34
- Hospital**, Care required of in treatment of 287
- Physiotherapy clinic**, necessity of modern 505
- Humerus**, Rational treatment of fractures of upper end of 403. See also Arm
- Hydrocephalus**, 540. resection of choroid plexus in severe unilateral internal, 332
- Hydrocephalus**, Bile changes in, 353
- Hydrothorax**, 477. failure of diuretics to affect rate of development of 374. chloride retention in experimental, 374, infected, 379
- Hyperemesis gravidarum**, Phenobarbital sodium treatment for 53. routine treatment for 54
- Hypernephroma**, 58
- Hyperthyroidism**, Acute yellow atrophy associated with, 10. review of treatment of by all methods, 3. 3. clinical value of Goetich test, 324. heart in adenoma with hyperthyroidism, 535. See also Gorter. Thyroid
- Hypophysis**, Importance of radiography in pituitary disease, 3. surgical problems in management of pituitary disorders, 3. tumor of duct of in child, 24. physiology and pathology of pituitary body 28. rupture of uterus following use of hypophyseal preparations 56. granules of 333
- Hypopituitarism**, Absence of prostate associated with, 279
- Hysterectomy**, Fundal, 145 for fibromyomata previously irradiated, 370
- Hysterovagnectomy**, Primary carcinoma of vagina treated by 6
- ILEUM**, Roentgen ray treatment of external tubercules of, and cecum, 34. colon anastomosis in invagination of, and cecum, 450
- Ileus**, Chronic duodenal, 34. spastic in groups, 34. during pregnancy 5. mechanical, during puerperium, 37. combination, 346
- Ilium**, Transference of crest of for flexion contracture of hip, 357
- Infection**, Stomach forms of 29. nasal accessory sinus disease and systemic 8. dental sepsis as etiological factor in of other organs, 9. interstitial keratitis due to focal 31. rôle of rhinopharyngitis in development of, 3. papillitis with focal, 43. relation of carcinoma to, 608
- Inflammation**, Effect of roentgen rays on subacute 83
- Influenza**, Spastic ileus in, 34. importance of in development of postoperative complications, 280
- Infusion**, Continuous intravenous, 79. prolonged intravenous and clinical determination of venous pressure 599
- Insulin**, 8
- Intestine**, Influence of bacteria of on thyroid, 9. strictures of small with pernicious anemia 31. typical forms of later obstruction of small, following appendicitis, 3. obstruction of by gall stones, 33. therapeutic value of cutting in obstruction of 33. roentgen observations on fat of irrigations of 34. character of digestion after operations on stomach and 33, 39. returning of non-peritonized sections of following resection, 37. treatment of chronic stasis of, by circumcoidostomy 37. spontaneous formation of anastomoses of, 37. developmental anastomoses of as cause of obstruction, 240. value of enterostomy in obstruction of 240. acute purulent processes in, 245. of 240. experimental research on artificial stenoses of 24. primary phlegmon of 24. surgical possibilities in traumatic rupture of 245. present-day methods of examination in diagnosis of tuberculosis of 347. permeability of mucosa of to certain types of bacteria determined by cultures from thionic duct, 347. lipomata of, 454. obstruction of upper 453. acute microperforation in infants, 455. unilateral exclusion of 456. retrograde intussusception of small, after gastro-enterostomy 55. oviduct of small, 55. intestinal surgery of, 553. procedure to facilitate execution of Casseini suture in suturing, 554. traumatic lesions of caused by non-penetrating blunt force, 555. Meckel's diverticulum and obstruction of, 555; surgical physiology of large, 559. treatment of fistula involving, and teros, 570. causatics of congenital mesenteric defects and extensive resections of small, 60. See also parts of intestines, operations, and conditions
- Intubation**, X-ray study of 32
- Intussusception**, Acute intestinal in infants, 455. colon anastomosis in ileocolic invagination, 459. retrograde, of small intestine after gastro-enterostomy 55

- Parathyroid gland, Tumors of in cases of multiple giant cell sarcoma of osseous system 43 refusal of to more of to osteomalacia protection of 37
- Parotid, Preservation of facial nerve in radical treatment of tumors of 27 pyogenic infection of and duct, 437
- Parthenogenesis, Research work with radium 11b regard to artificial, 74
- Patella, Primary osteomyelitis of 48 hitherto unknown disease of, 347 result of suture of old fracture of followed by suture of patellar tendon thirty 1 year later 905
- Pelvis, A new measurement as aid in diagnosis of rectum and contracted 63 recognition and measurement of functional dystonia in normal, 63 fractures of 68 pelvic varicocele 5 postoperative adhesions following gynecological laparotomy 57
- Penis, Epithelioma of following chancroidal infection 58
- Pen arterial sympathectomy 20 for angiospasm 11b vasomotor spastic neurosis, 27 observations on case treated by 11b treatment of perforating ulcer of foot by in spontaneous gangrene collect re view on, 207 in arteriosclerotic gangrene 20
- Pericardiotomy for purulent pericarditis, 339
- Pericarditis Pericardiotomy for purulent 339
- Periculis, Free grafting of omentum in 578
- Peristalsis, Bone regeneration from, 4 conflicting properties of, and bone medulla in formation of bone 560
- Peritoneum Physiology and pathology of 29 prevention of contamination of in drainage of abdominal abscesses, 4 principles of surgical treatment of infection of, 28 treatment of tuberculosis of in female with X ray 48 treatment of tuberculosis of in children 33
- Pentostem, Lymphaticostomy in 29 gastrointestinal movements in acute 28 biliary without perforation, 54 tuberculosis, 43
- Phagocytosis, Effect of ultraviolet rays on, 285
- Phenobarbital sodium for hyperemesis gravidarum 51
- Phenoltrichlorophthalen, Improved test 11b for liver function in pregnancy and its toxemia, 5 in estimating liver function, 255 259
- Pnebia, X-ray therapy in treatment of of low limbs, 497
- Physician, Right of, to sue employer for services performed at his request to employees not affected by compensation law 79 responsibility of in case of X ray burns, 80
- Physic Application of la of to medicine 603
- Physiotherapy A necessity of modern hospital, 505 use of in intermittent claudication, 597
- Pia arachnoid, Secondary carcinomatous infiltration of of brain preventing exclusively ocula symptoms during life, 5
- Pituitary body See Hypophysis
- Pilonitis, Pathogenesis and treatment of popliteal of, erosion of rectum by ectopic 56 relation of to in, to uterine anastomosis 576
- Plaster fascia, Details in disposition of 66
- Plaster casts, Managing orthopedic cases with 303
- Pleura, Primary cancer of in man and wife 5 hydatid cysts of, 30
- Pleural epilepsy 448
- Pterygia Acute suppurative 5
- Pneumococcus, Morphology of blood in infection of bones and joints by 283
- Pneumopericardium, Artificial, 339
- Pneumoperitoneum, As aid in diagnosis, 4 roentgenological methods for recognition of pions of kidney 28, technique of examination by 568
- Pneumothorax, Artificial in cases other than pulmonary tuberculosis 6 pleural pressure and lung collapse in artificial 5 cauterization of adhesions in treatment of pulmonary tuberculosis with artificial, 448 mechanism of action of artificial 547
- Pneumoventriculography Use of air in diagnosis of intracranial lesions value of in diagnosis of brain lesions 26
- Poli cholia Pathology of human bile secretion and report on 352
- Polycthemia Permanent following removal of spleen, 408
- Portal system Collateral circulation in, 46
- Pregnancy Toxemia of 11b acute yellow trophy of liver 63 artificial interruption of in toxemia, 64; sedimentation of red blood corpuscles and, 140 value of abdominal measurements in recognizing size and maturity of fetus, 140 psychoses of 140 glycosuria test for 49 serum diagnosis of syphilis in, 50 interstitial 50 improved phenoltrichlorophthalen test for liver function in and its toxemia, 3 ovarian cysts and, 5 influence of in syphilis, 5 death during 5 phenobarbital sodium treatment for hyperemesis gravidarum 53 in cases of nephrectomy for hemophilia 54 effect of radiation of oocytes on 73 management of female urinary bladder therapy 5 routine treatment for hyperemesis gravidarum 54 clinical study of ectopic, 55 fibromata complicated by 55 diagnosis of tubal and ovarian, 560 pythologic reaction of tissue extract luerated in, 560 diet during, 560 in ery young and elderly primipara 560 symptoms of extra-uterine at or near term 370 tuberculous of ovary and, 468 heart disease in 47 pathologic anatomy of autointoxications, 47 clinical aspects and treatment of complications of tubal 47 abdominal, 47 obstetrical case presenting unusual complications, 475 processes of tubal 573 roentgenograms of fetal skeleton as position, 573 eight during, 573 treatment of fibroid tumors complicated, 573
- Presentation, Factors influencing breech, cephalic, and transverse 370
- Proctoscopic examination, Importance of, 558
- Prostate Hypertrophy of, 73 adenoma of accessory glands suggesting hypertrophy of, 74 vasectomy as method of treating hypertrophy of 267 amputation of rectum and total prostatesectomy for associated neoplasms and tuberculosis processes, 331 absence of associated with endocrine disease, 370 renal insufficiency in hypertrophy of 380 treatment of carcinoma of, with radium 380 pre-carcinoma and early cancerous lesions of genito urinary tract 38 myomatous and adenomatous hypertrophy of, 480 surgical treatment of diseases of, 58 incidence of malignant disease in apparently benign enlargement of 58
- Prostatesctomy Perineal and pelvic cellulitis after suprapubic 265 pre-operative operative and post-operative treatment, 267 closure of suprapubic urinary fistula following suprapubic, 383
- Prost tomesectomy Amputation of rectum and total for associated neoplastic and tuberculosis processes, 331
- Psoas, 473 psychoses of 140 serum diagnosis of syphilis in, 50, acute inversion of uterus in, 56 serotherapy and chemotherapy in infection in, 57 mechanical ileus during, 57 treatment of infection in, 57 37 continuous drip irrigation in fever in, 58 ligature or excision of veins in infection in, 58 surgical treatment of certain infections of, 58 morbidity of 474 actinotherapy in infection in, 575

- Purpura, Splenectomy in hemorrhagic, 568, hemorrhagic, 567
- Pyelitis, Chronic, 579
- Pyelography Remarks on, 362 importance of, in recognition of causes of obscure abdominal symptoms, 363 common diagnostic errors in, 374
- Pyelonephritis, Partial, in kidney with two ureters, 374
- Pyelotomy Subcapsular 50
- Pyroptosis, Surgery of in nursing infants, 315
- Pyrosis Chemical changes in blood of dog after obstruction of, 3 congenital hypertrophy of, 38 surgery of pyroptosis in nursing infants, 35 diagnostic value of tropine test in conditions of, 35 tropine in treatment of congenital stenosis of, 36 and predisposition to ulcer 37 diagnosis and treatment of stenosis of, 34 chemical pathology of obstruction of, in relation to tetany 390 formation of hemorrhagic crusts in masses of excluded, 53 obstruction of, by gall stones, 50
- Pyrophosphorus Abnormality of kidney pelvis with, 69

QUESTION of case, 605

- Quinase, Anisotonia and amblyopia produced by 314

RACHITIS Late, the origin of deformities and war osteomata, 4 relation of precocious ossification of epiphyseal lines to chondrodystrophia fetalis, 47

- Radium, Treatment of menorrhagia by, 39 or surgical treatment in fibromata of uterus, 60, treatment of cancer of uterus with, 60, 65, 370 effects of on rabbit ovaries, 6 treatment of cancer of bladder by implantation of 7 new method of applying through cystoscope 75 prompt action of, on small or large infected tonsils and lingual tonsils 3 histologic changes in lymphatic glands following exposure to, 70 experimental work with, 74, use of beta rays of 74 technique of treatment of carcinoma of cervix with combination of X rays and, 340 results of, in gynecology 5 effects of on fetal development, 39 effect of on enzyme action, 364 treatment of glander with, 365 treatment of cancer of rectum 11b, 357 treatment of severe and persistent stasis hemorrhoids 11b, 365 treatment of carcinoma of penicula with, 380 use of, in treatment of disease, 400, and scurvy 40 surgical diathermy in its relation to, 403 recent cancer therapy 404, limitations of radiotherapy in management of fibrosarcoma of uterus, 468 carcinoma of female urethra treated with, 469, fibrosarcoma of amplexus treated by operation and, 533 analagous growths of bladder treated by resection and, 531

Radiol, Fractures of head and neck of, 68

Rachis, 9

- Rectum, Disposition of ureters in certain abnormal conditions of urinary bladder 39 erosion of, by ectopic placenta, 376, amputation of and total proctocolectomy for associated neoplastic and tuberculous processes, 35 treatment of cancer of by radiation, 35 new method of treating abscesses of, 46, gonorrhea of, 484 treatment of prolapse of in children by prone position, 558

Red blood cells See Erythrocytes

Refraction, Practical points in, 3

Research, Recent developments in surgical, 77

Respiration, Attacks of arrested, in newborn, 66

Replantation in abdominal surgery 568

- Rhine, Significance of vascular and other changes in, in arterio-sclerosis and renal disease, 3 3, functional retinocerebral degeneration, 430 disease of vessels of, and early signs of arterio-sclerosis in 75 4, 531

Rhith, Differentiation and proposals of arterio-sclerosis and renal, 109, effect of blood transfusion on, of per siccus anismus, 51

Rhinopharyngitis, Role of in contagion and development of infectious diseases, 321

Rhinorrhea, Cerebrospinal, 533

Rib, Primary infection osteomyelitis of, 182, value of immediate resection of, in dyspnea, 330 cervical, 487

Röntgen ray Effect of irradiation of oocytes by on fecundation and gestation, 73 effect of irradiation on fetal development, 350, effect of, on enzyme action 354, study of intubation with, 3 effect of, on glandular activity 368, growth-stimulating effect of, on normal human tissues, 391, practical methods spectroscopy and its physical basis, 523, measurements on its Assensia deep-therapy machines with special reference to Disease method, 394, blood and serum examinations immediately before and after irradiation, 377

Röntgen-ray diagnosis, Importance of radiography in doubtful cases of optic atrophy 2, of new growths in chest, 8 use of air in, of intracranial lesions 21 of duodenal ulcer by series of roentgenograms, 22 of diseases of diaphragm, 34, study of fate of intracutaneous, 34, pneumoperitoneum 35 and 4, pneumoconography of renal bed by Roentgen's method in, 67 of tumors of spinal cord, 9 pneumo-peritoneum in, of phases of kidney 38, causes of error in, of calculation of urinary tract, 160 values of pneumoconography in, of brain, 30 reliability of, of duodenal ulcer 443 of cancer of colon, 445 of lung abscess, 537 clinical importance of chronic changes in appendix discovered by 340, gastro-intestinal studies in chronic deforming arthritis, 487 of bone tumors, 487 of spinal lesions by Scherz's method, 544, of pulmonary abscess, 548, of carcinoma of tail of pancreas, 567 technique of pneumoconography in, 568, of choled cholelithiasis tubes, 570, of pregnancy 573 of neoplasms of urinary bladder 58

Röntgen ray treatment, Effect of small doses of roentgen rays in certain forms of impaired hearing 6, of epilepsy with intensive irradiation of one adrenal gland, 27, in rebellious trigeminal neuralgia, 26, of extensive decalcified tuberculosis, 34 relative value of, and surgery in fibrosarcoma of uterus, 60, of carcinoma of uterus, 60, changes produced by in adnexed connective tissue, 80, rational dosage in, of surgical diseases, 80, biological investigations of effect of, on carcinoma, 8 clinical and pathologic study of tonsils subjected to 3 effect of, on epilepsy 117 in advanced cases of carcinoma of stomach, 3, healing of wounds of gynecological operations following, 48, in peritonitis and genital tuberculosis in female, 48 principles and clinical application of intension deep, 73, responsibility of physicians for X-ray beam, 80, technique of, combined with radium in carcinoma of cervix, 340 measurement of dosage by ionization chambers, 463 effect of, on subcutaneous inflammation, 463 new high voltage, 514 in hyperthyroidism, 513, of gastric, 330 in Basedow's disease, 330 in cancer of rectum, 372 and results in, of cancer at Freiburg University Gynecological Clinic, 368 deep, 363 hydropon ion concentration, alkali reserve, sugar and urea protein nitrogen of blood following deep, 390 relation of surgical diathermy to, 403, recent cancer therapy 404 deep, in carcinoma of breast, 447 results of postoperative, of carcinoma of breast, 448, limitations of, in management of fibrosarcoma of uterus, 468, of

- tumor, 503 roentgen absorption in blood and extracorporeal irradiation of circulation in, of cancer, 504 roentgen ray ulcer and its treatment 505 epithelioma or possibly yphula of larynx completely healed by 533
- SACRO-ILIAC joint**, Relation of sciatica to, 46 tuber colosa of 386 arthritis obliterans of 357
- Saliva** Urea and mercury combining power of as index of renal insufficiency 577
- Salts**, Influence of inorganic, on tumor growth in *Rana* tals, 404
- Sarcoma**, Primary retroperitoneal 44
- Scapula** Relation of to scro-thoracic joint 46
- Scleritis** of fifth lumbar transverse processes associated with 375 surgical treatment of 445
- Schobert** New ideas with regard to congenital 65 Ab butt method for fixed, 65
- Scopolamine-hyoscyline**, Safe and practical method of inducing anesthesia with, in obstetrics 54
- Semio-circular canal**, Case of vertigo cured by opening external, 35
- Seminal excretion**, Improved technique for evocation for 385
- Sepsis** Importance of gripe in development of post-operative, 50 following tonsillectomy 3 in three great plaques 607
- Sex**, Research work with radium on determination of 74
- Shock**, Delayed and immediate anaphylactic 76 open mental work on traumatic with crossed circulation 386 intravital course of hemolysis and discussion of blood transfusion and development of from transfusion, 507 occurring in labor 473 influence of morphine on blood pressure and alkali reserve in traumatic, 608
- Shoulder**, Acute subacromial and subdeltoid bursitis 45 prognosis of dislocation of 50 technique of operative reduction of old luxations of 302 operative treatment of serouso-clavicular dislocations, 504
- Sigmoiditis**, Perforation and general peritonitis following rectal injection in, cels, 537
- Sinus**, Relation of infection and inflammation of in resting tumors of teeth to maxillary 8, new technique for positive identification of sphenoid, and ethmoid cells, 10 primary thrombo-sis of maxilled sinusary vein with secondary involvement of lateral, 8 radical operation on frontal, 318, 434, exophthalmos probably caused by non suppurative thrombosis of carotids 430 optic neuritis of sphenoidal, origin, 43 micro-cle of frontal, 433
- Sinusitis**, Diagnosis of optic neuritis due to disease of, 00 disease of nasal accessory and systemic infection, 8 and results of radical operations on nasal accessory 8 and complications of disease of paranasal, in infants and young children, 3 8 relation of disease of optic nerv to posterior nasal 431 disease of nasal accessory as causative factor in malocclusion of children, 43 head aches of sinus origin, 433
- Sinusitis**, Nasal changes due to, 3 from swimming, 3 7 practical considerations of ethmoido-sphenoidal, 3 8, orbital cellulitis as related to nasal 430 etiology and treatment of maxillary 434
- Size**, Question of, 603
- Skull**, Traumatic epithelial cysts, 84 treatment of cutaneous aneurysm, 85 pathogenesis and surgical treatment of trophoblastic hemangioma, 30 plastic repair of defects in, of jaw and chin, 3 recognition of regional recurrence of carcinoma in, 307 autoplasties with use of flaps of with long pedicles, 606
- Skull Osteomy** of traumatic intracranial aneurysm, cranial and endothelioma, 36 repair of defects in 7 1 to of those suffering head injuries, 24 diagnosis and treatment of fractures of base of 309
- Solima sublylate** Influence of on arthritis of rabbits inoculated with non hemolytic streptococci, 79
- Spectrometry**, Practical roentgen, and its physical bases, 503
- Sphenoid** Practical considerations of inflammation of, 3 8 optic neuritis originating in 43
- Spiral** and Roentgen findings in tumors of 9 early symptoms diagnosis, and surgical treatment of tumors of 3 retention of secretion over sacral segments in differential diagnosis between extra- and intra medullary lesions of 443
- Spiral puncture** Lumbar and cervical,
- Spine** Traumatic luxations of 503, osteo arthritis of 483 radiographic localization of lesions of by Sacard method 344 See also Spondylitis Vertebra
- Spleen** Ljuries 40 physiopathology of 4 relation of bilerster content of blood in anemia to function of 38 diagnosis of function of 359 importance of, in perforation of splenitis 36 surgical anatomy of avascular system of 464 traumatic rupture of normal, 465 permanent polycythemia following removal of, 405
- Splenectomy** Psychic disturbances after in pernicious anemia 43 change in blood picture following due beginning disturbances of uterine secretion, 247 effect of on hemopoietic system of malarial rheuma, 30 in hemorrhagic purpura, 568
- Splenopneumy** Of hepatic carcinoma 36 malarial, and its complications 36 chronic septic, 465
- Spinal lysis** In children 64 traumatic 164 operative treatment of tuberculous, 67 See also Spine
- Spondylitis** 68
- Spur t** See Strabismus
- Staphylococcus aureus** Passage of through kidney of rabbit, 303
- Sterility** Primary 470
- Sterilization**, Radium and 74
- Sternum** Transplantation of simple method of removing bone marrow for diagnosis during life, 387
- Stomach**, Plastic mastitis with cancer of, 5, as locus of infection 30 modification of function of, by drugs, 30 effect of histamine on secretion of 30 aphthae of 30, 30 344 presence of tolytic products and early diagnosis of cancer of 3 leucomyoma of 3 origin of hunger pains and significance in diagnosis of ulcer 3 old and new aids in differentiation of ulcer and cancer of 30 operative results in acute hepatic stage of 30 surgical treatment of liver of, 30 ulcer of as cause of fever 30 roentgen in treatment of advanced cases of carcinomas of 3 radical operation on with especial reference to mobilization of lesser curvature, 3 digestion after operations on, 33 39 experimental investigations regarding duodenal obstruction and stenosis of 35 hormones of, 34 diagnosis of ulcer of and its bearings on treatment, 36 pathogenesis of liver of, 337 multiple peptic ulcers, 38, experimental production of peptic ulcer 38 direct union of and duodenitis by invagination method after gastric resection, 38 benign tumors of 30 method for opaque meal examination of, 83 results of medical treatment of ulcer of, 343 hour glass constriction of, 343, perforated ulcer of, 343, 458, 35 primary sarcoma of and trauma, 344 ulcer of 433, resection of, for ulcer followed by immediate feeding with duodenal tube, 454 possible bearing of flow of lymph from duodenal angle on ulcer of 437

- diagnosis of, 549, microscopic studies on healing of ulcer of, 530 techniques for resection of ulcers of, 531 use of cautery in ulcer of, 55 effect of cholecistitis and cholecystectomy on secretory function of, 56 chronic biliary fistula closed by implantation of stones into, 564
- Stomach, Treatment of ulcerative, by intragastric injection of arsenic, 330
- Strabismus, Fundamental considerations in correction of, 3
- Streptococci, Determination of virulence of, 307
- Subarachnoid space, Absorptive power of, 44
- Subcutaneous gland, Treatment of lid as phlegmon by excision of, 3
- Suopurals, See Abscesses
- Surgery, Does not guarantee results of operation, 70 responsibility of for both due to hot water bag, 80
- Sutures, Living, in treatment of hernia, 45
- Swimming, Sinusitis from, 317
- Syphilis, Serous diagnosis of, in pregnant or parturient women, 50, influence of pregnancy on, 5 local Wassermann reaction new diagnostic aid in primary & septic factor is, 607. See also names of organs and parts
- TAR, Causation of neoplasms by, 77 character and action of cancer forming factor in, 506
- Teeth, Relation of infection and inflammation of investing tissues of, to maxillary sinus & pathologic reflex manifestations between eyes and, 66 dental apex as etiological factor in disease of other organs, 110, production of urinary calculi by devitalization and infection of in dogs with streptococci from cases of nephritis, 418 present status of pulp and root canal problem, 513
- Tendons, Congenital fixation of, of lateral peroneal muscles, 374 immediate plastic operations on injuries to, 450, transplantation of, in lower extremity 40 multiple xanthomatous granulomas in, 587 synovial inflammation of sheaths of, in hands and feet as occupational disease, 528
- Tentacle, Amputation in descent of, in weak minded, 74 operatin treatment of genital tuberculosis, 73 lymphoscrosis of, 3 seat of endocrine function of, 380 effects of reparative injury on tubules and interstitial cells of, 476
- Tetanus, 50 changes in motor ganglion cells in wound, 28 relation of tetanus bacilli in digestion tract to anastomosis to blood, 307 combination treatment of 50 postoperative, and extensor resections of small in tetanus 60 treatment of 60
- Tetany, Chemical pathology of pyloric occlusion in relation to, 530
- Thermogenesis, Role of oxidizing ferments in mechanism of, 70
- Thrombocytosis, Sudden death following, 14
- Thrombotic diath, Permeability of intestinal mucosa to bacteria determined by culture from, 347
- Thorax, See Chest
- Throat, Chronic catarrh of nasopharynx, pharyngeal tumors, 314 surgical diathermy in treatment of malignant disease of, 9 role of rhinopharyngitis in contagion and development of infectious diseases 24 diathermy for malignant disease of, 435 fibrosarcoma of nasopharynx treated by operation and radium, 33 congenital obstruction of, 513
- Thrombophlebitis, So-called effort, occurring in anal lary vein, 53
- Thyroidectomy in strabismus, 114
- Thyroid, Enlarged, from leucoma of laryngoscopy, 23 clinical findings in cases of enlarged, 23 surgical treatment of thyrotoxic asthma and sequelae of, in surgical infections, 548
- Thyroid, Influence of intestinal bacteria on 9 latent carcinoma of, producing metastases, relation of basal metabolic rate of diseases of, 14, lymphoscrosis of, 3 mortality rate following operations on, 348 end results in surgery of, 348, 349, acromegaly following operations on, 437 surgery of toxic, 437 physicochemical investigations of thyroid problems, 534, enlargement of, among children of Grand Rapids, 334. See also Gorter Hyperthyroidism
- Thyroidectomy Drainage after 348 technique of, 437
- Thyrotoxic, Chronic, 3 5
- Thyrotoxicosis and tonsillar infection, 436
- Tibia, Fracture of spine of 3 fracture of internal head of, with twisted displacement, 395
- Tongue, Operative treatment of malignant disease of, 8, 10, carcinoma of,
- Tooth, Prompt action of radium in treatment of small or large infected, of hospital, 113 clinical and pathologic study of, subjected to X ray 3 lymphoscrosis of, 3 unhealthy associated with cervical adenitis, 435, relation between thyrotoxicosis and infection of, 436
- Torticollis, Examination of spinal accessory nerves from case of bilateral acquired spasmodic, 326
- Trachea, Safety pin on, 9
- Tracheostomy, Escherichia coli, 97
- Trismus, Escherichia coli as physical, 82
- Tropacolum, Camerata section under spinal anesthesia induced with, 37
- Tuberculin, Use of, in certain forms of keratitis, 4 significance of reaction to, in ocular tuberculosis, 3, treatment of otitis media with, 316
- Tuberculosis, Treatment of so-called surgical, 77 septic factor in three great plagues, 607. See also names of organs and parts
- Tumors, X ray diagnosis of, in chest, 8, causation of, by tar 77 spontaneous malignant tumor and associated abnormalities in rabbit, 483, influence of inorganic salts on growth of 30 albino rats, 404 primary histothoracic, 471, X ray treatment of, 503, cytologic diagnosis of 608. See also names of tumors, organs, and parts
- ULCERS, Treatment of chronic ulceration of lower extremities, 335, treatment of scirrhus say 595. See also names of organs and parts
- Ureter Obstruction at uretero-vascular valve, 71 dysfunction of ureters in certain abnormal conditions of urinary bladder, 59 mesalo ureter, 50, kinks of, due to aberrant vessels, 304 surgical treatment of in tuberculosis of kidney 305 diagnosis and treatment of calculus in, 365 partial pyelonephritis in kidney with double, 334, pre-cancerous and early cancerous lesions of, 345 physio-pathologic study of kidney with double, 477 double in case of tuberculous kidney, 478, contractility of, 579, anastomosis of, into gall bladder in extirpation of bladder 580 simple treatment of certain lesions of intravascular, in female, 561
- Urethra, Resection of, with mobilization and suture in constrictive strictures and fistula, 73, primary carcinoma of, 367 carcinoma of female, treated with radium, 466, primary carcinoma of female treated by diathermy 371 penile and prepuce-by treatment of strictures of, 582 plastic operations on male, 58
- Urethritis, Chronic, in women, 160 complications in gonorrheal, 378

- Urinary tract, Diathermy in treatment of tumors of lower 73 general practitioner and 74, etiology of lithiasis of, 75 in females and young infants, 60 causes of errors in roentgenological diagnosis of calculi of, 60, production of calculi of, by dentalization and infection of teeth in dogs with streptococci from cases of sepirobacteremia, 483 things general practitioner should know about urology 584 absorption from, 585
- Ureter, Relation of residual, to urinary tract disturbances 53 idiopathic reaction of Wilkholm, 483 bacteriostatic action of, after intravenous administration of mercuriochrome to normal rabbits, 585
- Urology, Relation of general practitioner to urologist 74 things general practitioner should know about, 584
- Uterus, Palliative and operative treatment of prolapse of 58 radiotherapy or surgical treatment in fibromat of, 60 treatment of carcinoma of, by surgery, X ray and radium, 60 morphological histology of adenocarcinoma of body of, in relation to longevity 6 mixed tumors of, 45 carcinoma of cervical stump 146 cancer of cervix treated by radium before operation, 46 chronic endocervicitis, 146 sarcoma of 147 149 acute postperitoneal erosion of 50 technique of treating carcinoma of cervix with combination of X ray and radium rays, 149 fibromata complicated by pregnancy 55 rupture of, following use of hypophyseal preparations, 56 hist history of double 503 buxland operation for prolapse 565 treatment of septic and persistent hemorrhage of with radium 505 histologic pictures representing cure of baso-cellular epithelioma of, 565 relative malignancy of neoplastic process as indicated by predominant type of cancer 566 surgical cervix, 567 end results of X ray treatment of cancer of, at Freiburg University Gynecological Clinic, 568 endometrial adenoma of abdominal all following ventral suspension of 467 fibromyomata of 467 inguinal hernia of 467 treatment of cancer of cervix of, 468 limitations of radiotherapy in management of fibromyomata of 468 gas bacillus infection of, 474 hysterectomy for fibromyomata if previously irradiated, 570 treatment of fistula involving intestines and, 570 insufflation of 570 cancer of neck of treated with radium, 570 treatment of fibroid tumors of complicating pregnancy 573 rupture of 55
- Uvula, Etiology of, 57 5
- VACCINATION New principles in therapeutic inoculation, 54 in postperitoneal infection 575
- Vagina, Squamous epithelioma of 62 adenoma of fornix of simulating cancer of cervix 62 primary carcinoma of, 62 primary carcinoma of treated by hysterovagnectomy 6
- Valvulotomy Carotidotomy and, performed for aortic stenosis, 450
- Vancocele Pelvic 5
- Vasectomy method of treating prostatic hypertrophy 567
- Vasostomy New technique for for seminal excubitis, 585
- Vulva's papilla, Colloid carcinoma of 34
- Ven, So-called effort thrombophlebitis of axillary 33 primary thrombosis of innosod emissary fifth secondary involvement of lateral sinuses, 8 transfixion through umbilical, an hemorrhage of newborn, 58 continuous intra emous infusion, 570 simulaneous ligation of and artery 497
- Ventriculography Value of in brain diagnosis, 56 ex cephalography 54
- Ventriculotomy And puncture of floor of third ventricle 3
- Vertebra Development of upper, and ossification of iliac, 63, ossification of fifth sacral, 64 absorption of fifth lumbar transverse processes associated with sciatic pain 385 See also Spine
- Vertebra Myeloma of 44, acute osteomyelitis of 57
- Vertigo cured by opening external semicircular canal, 53
- Vestibule Practical diagnostic value of tests of vestibular mechanism, 35
- Violet ray Bactericidal action of 585 effect of on phagocytes, 585
- Vision Practical points in refraction 3 curious phenomena of and their practical importance, 56 causes of binocular contraction of visual field 4 change in, due to anisometria, 5 growing importance of mapping fields of 530
- Vitreous Slit lamp studies of berron of and its relation to cataract operations 530
- Volkman's contracture, Origin of 44 treatment of 48
- Vomiting Therapeutic value of, in intestinal obstruction, 53 phenobarbital sodium for hyperemesis gravidarum, 53 routine treatment for hyperemesis gravidarum 54
- Vulva Anatomical and clinical study of benign tumors of female external genitalia, 469
- WASSERMANN test, Local, new diagnostic aid in primary syphilis 6
- Weight during pregnancy 573
- White blood cells See Leucocytes
- Wounds Healing of of gynecological operations following previous roentgen treatment, 48
- Wrist Fracture dislocations of carpal bones, 39 treatment of dislocated semilunar carpal bones, 594

INDEX TO BIBLIOGRAPHY

SURGERY OF THE HEAD AND NECK

Head, 85 8 889, 406 509, 6
 Ey, 85, 8 89, 406, 509, 6
 Ear, 86, 8 890, 407 5 6
 Nose, 86, 82, 89 407 5 6
 Mouth, 86 83 89 408, 5 6
 Throat, 87 83 89 409 5 6
 Neck, 87 84, 892, 409, 5 6

SURGERY OF THE NERVOUS SYSTEM

Brain and Its Coverings, Cranial Nerves, 89, 85 89 4 0,
 5 6
 Spinal Cord and Its Coverings, 86 893, 41 5 6 3
 Peripheral Nerves, 89, 86 893 4 5 6 3
 Sympathetic Nerves, 90, 86 894, 41 5 2, 6 3
 Miscellaneous, 86, 4 6 3

SURGERY OF THE CHEST

Chest Wall and Breast, 88, 87 894 41 5 3 6 3
 Trachea, Lungs, and Pleura, 88, 87 894, 4 5 3, 6 3
 Heart and Pericardium, 88, 87 894 4 5 3, 6 3
 Esophagus and Mediastinum, 88, 88, 894 4 5 3 6 3
 Miscellaneous, 89, 88, 895, 41 5 3

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum, 90 88, 895 4 5 3 6 4
 Gastro-Intestinal Tract, 90 88, 89, 4 5 5 6 4
 Liver, Gall Bladder, Pancreas, and Spleen, 92, 9 898,
 4 5, 5 6, 6 5
 Miscellaneous, 92, 93, 893, 4 6, 5 7 6 6

GYNECOLOGY

Uterus, 96, 93 899 4 7 5 7 6 6
 Vaginal and Peri-Uterine Conditions, 97 94 899 4 7
 5 8, 6 7
 External Genitalia, 97 94 899, 4 8 5 8 6 7
 Miscellaneous, 97 94 899 4 8 5 8 6 7

OBSTETRICS

Pregnancy and Its Complications, 98 94 899 4 8 5 9
 6 7
 Labor and Its Complications, 94 95 899 4 8 5 9 6 8
 Puerperium and Its Complications, 99 95 899 4 9 5 20
 6 8
 Newborn, 99 95, 899 4 9 5 20 6 9
 Miscellaneous, 99 96 899 4 9 20 6 9

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter, 99, 96, 30 4 9, 520 6 0
 Bladder, Urethra, and Penis, 99, 97 30 420, 5 6 9
 Genital Organs, 99, 97 30 420 5 1, 6 20
 Miscellaneous, 98, 303 4 5 6 20

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

Conditions of the Bones, Joints, Muscles, Tendons, Etc.
 93 93 303, 4 5 2, 6 20
 Surgery of the Bones, Joints, Muscles, Tendons, Etc.
 94, 899, 304 42 5 3 6
 Fractures and Dislocations, 95 89 304 4 2, 524 6
 Orthopedics in General, 95 89 305 4 3 524

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

Blood Vessels, 95 302, 305, 4 3, 5 4, 6
 Blood and Transfusion, 96 303 305 424 5 5, 6
 Lymph Vessels and Glands, 96 303 306 424, 5 5 6
 Miscellaneous, 306

SURGICAL TECHNIQUE

Operative Surgery and Technique, Postoperative Treatment
 893 306 424 5 5 6
 Antiseptic Surgery, Treatment of Wounds and Infections,
 303 306 424 5 5, 6
 Anesthesia, 2, 302 306 424 526 6 3
 Surgical Instruments and Apparatus, 4 5, 526

PHYSICO-CHEMICAL METHODS IN SURGERY

Röntgenology, 2, 302, 306 425 526 6 3
 Radium, 3 304 307 4 5, 527
 Miscellaneous, 3 307 4 5, 527 6 3

MISCELLANEOUS

Chancal Entities—General Physiological Conditions, 3
 304 307 4 5 5 6 3
 General Bacterial, Mycotic and Protozoan Infections, 3
 305 307 527 6 3
 Ductless Glands, 305, 308 426 5 8
 Surgical Pathology and Diagnosis, 94 308, 426, 5 8, 6 3
 Experimental Surgery, 94 305 308 426, 5 8
 Hospital Medical Education and History, 94 305, 308,
 426
 Medical Jurisprudence, 94, 306, 309, 6 3

INDEX TO AUTHORS

- Aaron, C D 556
 Abbott, C R 33
 Abell, I 4
 Adams, P 3
 Adon, A W 27
 Agoston, P 337
 Akins, W H B 40
 Akins, A 74
 Albert, F H 530
 Albel, D 95
 Albert, H 570
 Albrecht, H A 50
 Allen, A M 43
 Alldred, A H 570
 Alwardin, R 344
 Allen, R W 63
 Alport, E D 433
 Alport, F 530
 Allen, F W 333
 Almon, F 35
 Amst, M A 4
 Amson, S E 30
 Anderson, E L 404
 Anderson, F W 331
 Andrews, C G 44
 Andrus, W D W 3
 Angell, A 34
 Anicheta
 Anpack, B M 574
 Anson, T 552
 Appert, F L 338
 Appleman, L F 43
 Arai, K 8
 Arms, R A 573
 Armstrong, A 37
 Arnold, J O 370
 Arnoult, G D 74
 Arnsperg, P W 460
 Aschoff, L 28
 Austin, R C 537
 Babcock, W W 561
 Bachrach, R 75
 Bagby, H J 50
 Bailey, H 50
 Bailey, J H 530
 Baldwin, J F 58
 Balmer, D C 15
 Balmain, H A 476
 Bankart, A S H 546
 Banting, F J 8
 Barro, P 66
 Barkley, P 00, 3 3
 Barling, G 141
 Barling, S 14
 Barnard, T W 5
 Barnoy, T 34
 Bartlett, F H 26
 Bar, M H 36
 Bastard, P 44
 Bastard, R 44
 Bauer, J H 307
 Bauer, K H 306
 Barry, L 39
 Beck, H G 36
 Becker, A 34
 Behrend, M 403
 Bejall, A F 68
 Bell, L M 37
 Bell, W B 363
 Bell, A E 374
 Benedict, C G 436
 Benedict, F G 456
 Benedict, S R 404
 Benedict, W L 4
 Bennett, T I 29
 Bernard, L 30
 Bernzeller, L 37
 Bernoff, E L 247
 Berger, A 568
 Berkeiser, E J 496
 Berry, J 8
 Berry, J A 24
 Besan, A D 567
 Bey, H L 335
 Bird, A 8
 Birnch, R 506
 Birnet, L 4
 Bircher, E 549
 Blackburn, C B 45
 Blacker, O 59
 Blaine, E S 337
 Blair, V P 9 3 9 42
 500
 Bloch, A 570
 Blood, K 8
 Bloodgood, J C 24 344
 Bona, L P 437
 Bockus, H L 247 355
 Boebinger, M B 5 8
 Bolmann, G 240
 Boldt, H J 303
 Boman, R 79
 Boothby, W M 328 53
 Boot, R H 79
 Borden, C R C 3
 Bordon, L 26
 Boularna, 590
 Boushous, 590
 Bowen, W S 574
 Bowing, H H 35
 Boyd, L 6
 Boyd, G 266
 Boyer, H I 3 5
 Brauch, W F 74
 Brack, E 58
 Brady, L 55
 Brinegar, K 24
 Brinkwaite, L R 457
 Brunsfield, J W 459
 Brown, A 243
 Brown, W 39
 Brown, G 5
 Brown, W B 47
 Brummer, B 538
 Broadman, G 348
 Bridgett, F 7
 Brindes 55
 Brocq, P 14
 Brooks, D 407
 Broster, I R 439
 Brown, G O 153
 Brown, G B 8
 Brown, G A 60
 Brown, I E 496
 Brown, P K 30
 Brown, P W 557
 Brown, R O 547
 Brown, W H 403
 Brucan, F 26 7
 Bruns 55
 Bruns, H 497
 Buchanan, L J 4
 Buckman, L T 37
 Buckle, M 47
 Budge, C H 306
 Boerger, L 3 77
 Buerbe, H C 58
 Bue, L A 358
 Bullrich, R A 340
 Brame, I 57
 Burt, I F 547
 Burch, L F 499
 Burkhardt, H 34
 Burck, C G 494
 Burba, C W 333
 Burton, I 26
 Burrell, L S T 6
 Butler, T H 6
 Bujo, A 50
 Busse, A 67
 Byrnes, C M 28
 Cabrad, R G 476
 Caillade, 587
 Cameron, R 154, 464
 Cameron, H C 339
 Cameron, S J 37
 Campbell, D G 47
 Campbell, W C 387
 Carles, J 32
 Carman, R D 243
 Carre, A 33
 Carrington, O L 509, 602
 Carter, W W 7
 Carwardine, T 36
 Castano, C A 606
 Catana, J 276
 Catell, M 608
 Caul, J R 50
 Cave, H W 5
 Cavina, G 24
 Cavichas, A 276
 Cerf, L 245
 Chance, B 07 3
 Chaney, W C 463
 Chaoul, H 77
 Charner 68
 Charner 55
 Charlton, P H 47
 Chaston 587
 Chennin, L 06
 Cheney, R C 53
 Chesky, V E 48
 Chenda, W R 20
 Childs, S B 8
 Chocholla, L F 479
 Christie, A C 3 3
 Christopher, F 207
 Chodovsky, M 603
 Churchman, J W 287
 Ciprasi, G 78
 Cognoni, O 36
 Clark, A J 507
 Clark, J O 4
 Clay, H T 534
 Clayton Green, W H 8
 Clemens, F J 543
 Closs, S 470
 Coffey, W B 30
 Coban, E 533
 Cole, L G 326, 453
 Colmers, F 34
 Colonna, P D 59
 Colston, J A C 585
 Constantine, M 303
 Contagyn, A 63
 Corbelle, C 60
 Corbion, B C 73
 Cordes, F C 43
 Corcas, J A 468
 Costain, W A 29
 Cote, C R 60
 Cotta, G 3
 Cotard, H 73
 Cowan, J 46
 Cowan, J F 490
 Craig, W M 459
 Crile, O W 82, 56
 Crompton, C R B 71
 Crumble, A H 264, 378
 Cruckshank, J N 37
 Culver, H 267
 Cusum, C G 50
 Cunningham, R S 430
 Curtis, A H 5
 Cushing, H 23
 Cutler, C W 43
 Cutler, E O 343, 450
 Czernak, H 260
 Daels, F 365
 D'Agata, G 35
 Dagnan, W F 33
 Dale, H H 26 28
 D'Allocco, O 26
 Damborn, C 6
 Dandy, W E 430, 54 54
 Dargachet, E 56
 David, V C 340
 De, M, D M 280
 Davis, E D D 544

- Mosier W R 78
 Mosier J G 481
 Mollinger W J
 Mercer W 490
 Merritt E A 5 3
 Messembrecht, E 3
 Meyer A W 44
 Meyer H 35
 Michael, J C 337
 Michelson F 161
 Michas, H C 255
 Michos, 575
 Mignone, G 69
 Miller O L 49
 Miller R T 1
 Mills, C A 597
 M'Intosh, H 433
 Mino, P 55
 Mirza, P L 78
 Mitchell, J F 53
 Mixer W J 3
 Moffat W 57
 Moffat, B W 393
 Molleson W M 525
 Mokochoff, A G 20
 Mondor, H 47
 Moore, E 357
 Montague, V 5
 Montgomery M L 20
 Moore, B H 585
 Moore I 20
 Moore, J E 52
 Moore, R F op. 3 3
 Moore, R S 9
 Moore S 456
 Moran, J 279
 Morgan, D H
 Morgan, E A 320
 Morgan, G 14
 Morrison, D M 596
 Mosiot, R 459
 Morton, J J 255
 Mosher, H P 5
 Moskowitz, M J 3 9
 Mottram, J C 70
 Mouchet, 455
 Mouchet, A 65
 Mowatt, M 69
 Mowery W E 50
 Moyzaban, B 285
 Mocharak, M A 555
 Muehlecker, A 5
 Mueller E 30
 Mueller W 48
 Moenrich, G E 496
 Muller G P 69, 16, 445
 Murray H A 550
 Mueser J H Jr 26

 Nardus, W H 430
 Nasrow, W M 20
 Nather K 143, 307
 Natanson, J H 307
 Navarro Escame, F 570
 Neale H 3 4
 Neira, D 64
 Neill, W J 377
 Newman M J 53
 Neumann, P 143
 Newwurt, E 67

 New G B 220, 320 533
 Newton, F C 343
 Nieves, H 68
 Nielsen, N A 343
 Nixon, C E 41
 Novak-Jonesand, 66
 Nuechterberger, L 498
 Nuttall, B C W 546
 Nyakale A J 58

 Oastler F R 65
 Ochauer, A J 586
 O'Connor V J 57
 Odemal, T H 43
 Odernatt, W 275
 Octopus, E 235
 Obyrecht, J 69
 Oliva, C 478
 Oliver S F 464
 O'Neil, R F 269
 Openshaw T H 546
 Orator V 71 307
 Orndoff, B H 398
 Orr T G 32, 455
 Osgood, R B 44
 Owens, A A 339
 Ott, W O 7
 Ottenberg, R 574
 Owens, H R 448
 Owsen, D P H 396

 Pack, G T 608
 Padgett, E C 437
 Page, C M 592
 Palmer D W 40
 Pannett, C A 553
 Papan, 250
 Papan, E 90
 Papan, F 26
 Parker C H 598
 Parker W R 3
 Parkerson, J P 439
 Parada F 541
 Parnasoff, O 570
 Parsons J P 5
 Paschewicz L 77
 Patterson, D 443
 Patterson, H J 0
 Patterson, M 435
 Paul N 343
 Payr, E 30
 Payra, L 403
 Peck, C H 3
 Pemberton, J de J 227 534, 539
 Penfield W G 20, 599
 Perkins J J 6
 Perkins G 46
 Peter L C 539
 Petrusman, M G 40
 Petrus, J 4
 Peterson, A J 143, 399
 Peterson, E W 32
 Peterson, M F 597
 Peterson, R 64
 Petruschewskaja, O F 566
 Petroff N 73
 Petre, J L A 358
 Peyton, S M 28
 Mahler G E 447 204

 Pfeiffer F 567
 Phasand, L E 475
 Phelan, G W 567
 Phosander D B
 Phillips J 473
 Picard, H 265, 304
 Pickler H 213
 Pierce, G W 30
 Pielard, G M 247 355
 Pilger 398
 Pissard M 30
 Pisch, A C H 8
 Pischke, A J B 4
 Pischke G 340
 Pischke, G 344
 Pitt, G A 3 8
 Playfair, K 245
 Poetel, O 8
 Polkman, A G 3 4
 Polak, J O 50, 265, 307
 Polakman, B 455
 Pollock, W B I 213
 Polonovski, M 5
 Pool, E H 40
 Porter C A 526
 Porter, 473
 Portin, L 34
 Portin, M M 28
 Portin, S A 38
 Portmann, O 275
 Pusey W C 97
 Potter, I W 370
 Potshot, L 256
 Poyales, F 97
 Pratt, J J 256
 Prenchish, A 21
 Price H T 70
 Pringle, J H 8
 Pridder, D S J 374
 Priesep, L 22
 Puth, 593

 Quermont, F 54
 Quack, D 454
 Quashy W C 477

 Rabert, J 25
 Ramond F 3
 Ramstedt, C
 Razul, C W
 Rankin, F W 55
 Ranzo, E 29
 Reed J M 324
 Reed T 534
 Reeder W G 4
 Reel, F J 147
 Regan J C 83
 Reich, H 32, 49
 Reikman M E 549
 Reio, E 3
 Reinhold, G 28
 Rhein, M L 533
 Rhein Valera, R 430
 Riddell, T E
 Riddick O 516
 Riddle, J 296
 Ritter A 223, 254
 Rivarola, R A 7
 Riviere, C 18
 Roberts, C S L 26

 Robertson, B 286
 Robertson, W M F 604
 Robins, 289
 Robins, C R 31
 Robitach, E C 464
 Robledo, Sosa, J H M 77
 Roehet, R 269
 Roehet H L 322
 Roehet 265 479
 Roedelius, E 483
 Roederer, C 185
 Rogers, R R 35
 Rohde, C 300
 Roker P 11
 Romanus, W H C 16
 Romer, F 573
 Romig, A J 470
 Rose, S T 502
 Rosenbuth, B 5
 Rosenfield H H 5
 Rosenberg E C 415, 452
 Roesselt, M A 120
 Ross, F G 58
 Roth S C 265
 Rowhart, L 251
 Row, P 313
 Row street, E 250
 Roy, D 3
 Rudberg, M 28
 Ruge, C 597
 Runnals S C 53
 Rush, G 1 20
 Ryle, J A 76
 Rypma, H 6

 Sacchi G 375
 Saito, M 26
 Salasani, R W A 339
 Salasani, 577
 Sante, L R 337
 Sarantis Papadopoulos, A 65
 Sargent, P 544
 Sattler, L 528
 Sauer, W E 2 5
 Sauerbruch, F 7
 Sampo, 54
 Schaeffer, W N 22
 Schendler, R 390
 Schena, H R 597
 Schaeffer A 346
 Schlegel, A 58
 Schmitt, E O 26
 Schmidt, G 588
 Schmitt, H 60, 219
 Schura, A 67
 Schuenders, E F 5
 Schuurbansen L 296
 Scholz, T 507
 Schroeder J H 73
 Schubert, 44
 Schuppert, 25
 Schur H 3
 Schuster, O F 487
 Scott, S G 283
 Seidman, 525
 Seig, M O 39
 Seitz, E 26
 Seiprda, 403
 Sever J W 482

- Severn, A G M 26
Seylarth, C 237
Spalmer, 0
Shackleton, W E 405
Shanbrough, G F 7 J 5
Shaw H B 00. 3 3
Shaw W F 469
Sherman, D H 260
Sherren, J 561
Shakua, C 278
Selberry J B 278
Selberten, 274
Shier D 40
Shimoda, M 359
Simon, L 56
Simons, A 501
Sperstein, D M 397
Sera I E 404
Sistrunk, W E 57
Skellern R H 8
Slicker la Rosa E 358
Smith, O G 7 60
Smith, I P 54
Smith, L W 24
Smith P E 54
Soederlund, G 48
Sonnag, 66
Specht, O 559
Speciale F 58
Speed, A 245
Spiegel, E 34
Spencer H R 62, 47
Spiegel, N 5
Spiller W G 54
Spital, B 67
Savetka, A 56
Stahr, H 5
Starkinger F 534
Stammig, A 303
Stefani, A 56
Steinmann H 75
Steiger, M 7
Stem, I F 573
Stencler A 30 480
Stephens, R 5
Stern, D 6
Stevens, A R 460
Stevens, T G 6
Stevens, W F 540
Stewart, W H 548
Stieren, E 09
Stoll, G F 66, 28
Stoner E 596
St Jatro 9
Stone, H B 37
Stookry, B 334
Stone M 334
Stradyn P J 9
Strach B
Strasse V V 556
Struter G L 50
Stroganoff 54
Sugrta K 404
Swan R H J 58
Sweet, J E 77 37
Swift, H F 70
Syme W S 8, 9
Symonds C 33
Szernyaki, B 349
Sallard Z 57
Szynarowicz J 5
Tashiro S 464
Taylor H M
Tjlor R G 487
Tee I J 55
TenBroeck, C 397
Tepitky D 500
Thiencot, 479
Thomas A 37
Thomas C J 205 584
Thomas H B 27
Thomas W B 3 3
Thompson J E 69
Thomson on Golditz G 1 6
Thomson, St C 43 433.
Thomson Walker J 26
Thakham H C 33
Tormgani, 540
Toune E H 30
Troell A 5
Trotter W 545
Truchard J 56
Truchule P E 467
Tabby A H 54
Turck F R 509
Turnball, H M 59
Turner D 400
Turner G G 46
Turner P 46
Ughely, J 328
Underhill F P 603
Unger E 379
Unger L J 77
Urban, K 6
Urprung, C W 50
Vacant, C 454
Vad, D T 43
Valenti, A 35
Vak tin, B 77
Vance, B M 555
Vandepiet,
VanderHooft D 68
V Hoonen B 54
Vantun 468
Verhoef I H 4
Verlaac 340
Vennels H 50
Veta H R 334
Vignes H 49
Vintrop, B 75
Vital Am 34
Vort, E 45
Volkman J 464
Von Bozza J 24
Von Dittrock, A 49
Von Verrynard K 7
Von Redwitz, E 39
Von Stulzenrauch 49
Vorlander A 8
Voron 575
Vulhet H 5
Vysin, V 247
Wagner A 54, 7
Walker F 46
Waldenstroem H 6
Wahke, I M R 3 543
Walters W 205
Walther 595
Ward, G 405
W ternworth, S J 326
Watson B P 57 57
W ts S H 550
Webb C W 3 3 457
Weber I P 489
Wegelin C 3 3
Weibel W 148
Weil, A J 458
Weil, M P 39
Weil H A 6
Weller C V 30
Wells L D 454
Welsh G 46
Wels W E 63
Wertheimer P 54
Wescott C D 3
Wesson, M B 374
Westmans, S 403
Weston, P G 77
Wheeler W
Whelon H 457
White, F C 280
White, F W 149
White H P W 58
White P A 84
White P D 47
Whitehouse B 37
Whitlow J E 395
Whitman, A 3
Widomits P 558
West, P I 456
Walsky, A O 36
Wilcox W 9
Wilham, F H 3
Williams P I 149, 369
Williamson A C 576
Williamson, C S 38, 347
Williamson, R T 5
Williamson Noble F A 3
Willms, F A 535
Wilson, L B 535
Winkler V 350
Wishart D J G
Wohlgemuth, K, 601
Wojciechowski, A 29
Wolf H F 45
Wolf K 507
Wolkstein, K 26
Wood, F C 404
Woodman, E M 428
Woods, A C 6
Wright A E 54
Wright, G 46
Wright H W 149
Wright, J W 07
Wright R E 3
Wybe, A 323
Young, G 1 3
Young H H 267 260
Young H M 58
Zanger C 480
Zargier 67
Zarue P 3
Zorppel, H 464
Zolheger, F 271
Zugmood, I 7

